Author Index

A

del-Latif, Ata A., and Spyridon G. A. Alivisatos. Purification and Properties of Pyridine Nucleosidase (Glycosidase) from Bull Semen, 500

ood, L. G. See *Tanaka and Abood*, 2999

raham, S. See *Bennett, Drori, Krech, Rosenzweig, and Abraham*, 1758

rams, Adolph, and Peter McNamara. Polynucleotide Phosphorylase in Isolated Bacterial Cell Membranes, 170

rams, Richard. See *Edmunds and Abrams*, 2636

ramsky, Tessa, Lewis P. Rowland, and David Shemin. The Formation of Isoleucine from β-Methylaspartic Acid in *Escherichia coli* W, PC265

dachi, Kozaburo. See *Ichihara, Adachi, Hosokawa, and Takeda*, 2296

dams, Elijah. See *Goldstone and Adams*, 3476

dams, Julia A., Joseph Jarabak, and Paul Talalay. The Steroid Specificity of the 17β-Hydroxysteroid Dehydrogenase of Human Placenta, 3069

—. See *Jarabak, Adams, Williams-Ashman, and Talalay*, 345

sen, Philip. See *Morell, Aisen, and Scheinberg*, 3455

kedo, Hitoshi, and Halvor N. Christensen. Transfer of Amino Acids across the Intestine: a New Model Amino Acid, 113

—, and —. Nature of Insulin Action on Amino Acid Uptake by the Isolated Diaphragm, 118

lexander, J. See *Wilson and Alexander*, 1323

lexander, Nicholas M., and Betty J. Corcoran. The Reversible Dissociation of Thyroid Iodide Peroxidase into Apoenzyme and Prosthetic Group, 243

lgranati, Israel D., and Enrico Cabib. Uridine Diphosphate D-Glucose-glycogen Glucosyltransferase from Yeast, 1007

livisatos, Spyridon G. A., L. La Mantia, F. Ungar, and B. L. Matijevitch. Imidazolytic Processes. VII. Biosynthesis of the Pyrophosphate of 5′-Inosinic and 5′-Adenylic Acids, 1212

Alivisatos, Spyridon G. A. See *Abdel-Latif and Alivisatos*, 500

Allen, Esther H., and Richard S. Schweet. Synthesis of Hemoglobin in a Cell-free System. I. Properties of the Complete System, 760

Allerton, Samuel E., David Elwyn, John T. Edsall, and Pierre-François Spahr. Isolation and Amino Acid Composition of Dog Plasma Albumin, 85

Alvarado, Rosa. See *Segovia-Riquelme, Campos, Solodkowska, Gonzalez, Alvarado, and Mardones*, 2038

Amaral, D. See *Avigad, Amaral, Asensio, and Horecker*, 2736

Amberg, Ralf. See *Richert, Amberg, and Wilson*, 99

Ambrose, John A. See *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber*, 992

Amelunxen, R., and Santiago Grisolia. The Mechanism of Triosephosphate Dehydrogenase Inactivation by Reduced Dephosphopyridine Nucleotide, 3240

Anders, Monika. See *Furth, Hurwitz, and Anders*, 2611

—. See *Hurwitz, Furth, Anders, and Evans*, 3752

Anderson, Louise, and Martin Gibbs. The Biosynthesis of Caffeine in the Coffee Plant, 1941

Anderson, R. L., and W. A. Wood. Pathway of L-Xylose and L-Lyxose Degradation in *Aerobacter aerogenes*, 296

—, and —. Purification and Properties of L-Xylulokinase, 1029

Anfinsen, Christian B., Michael Sela, and Juanita P. Cooke. The Reversible Reduction of Disulfide Bonds in Polyalanyl Ribonuclease, 1825

—. See *Epstein and Anfinsen*, 2175, 3464

—. See *Epstein, Anfinsen, and Sela*, 3458

—. See *Haber and Anfinsen*, 1839

—. See *Potts, Berger, Cooke, and Anfinsen*, 1851

Antonini, Eraldo, Jeffries Wyman, Jr., Alessandro Rossi-Fanelli, and Antonio Caputo. Studies on the Relations between Molecular and Functional Properties of Hemoglobin. III. The Influence of Salts on the Bohr Effect in Human Hemoglobin, 2773

Apgar, Jean, Robert W. Holley, and Susan H. Merrill. Purification of the Alanine-, Valine-, Histidine-, and Tyrosine-acceptor Ribonucleic Acids from Yeast, 796

Aposhian, H. Vasken, and Arthur Kornberg. Enzymatic Synthesis of Deoxyribonucleic Acid. IX. The Polymerase Formed after T2 Bacteriophage Infection of *Escherichia coli*: a New Enzyme, 519

Archibald, Reginald M. Reactions of Creatinine with Alkaline Picrate, 612

Arlinghaus, Ralph B. See *Ogle, Arlinghaus, and Logan*, 3667

Armstrong, Marvin D. See *Kakimoto and Armstrong*, 208, 422

Asano, Akira, Arnold F. Brodie, Arthur F. Wagner, Paul E. Witterich, and Karl Folkers. The new Synthetic 6-Chromanyl Phosphate of Vitamin $K_{1(20)}$ and Its Behavior in an Enzymatic System from *Mycobacterium phlei*, PC2411

Asen, Sam. See *Morris, Thompson, Asen, and Irreverre*, 2180

Asensio, C. See *Avigad, Amaral, Asensio, and Horecker*, 2736

Ashley, Billy D. See *Westphal and Ashley*, 2763

Ashwell, Gilbert. See *Gabriel and Ashwell*, 1400

—. See *Preiss and Ashwell*, 309, 317

Askari, Amir, and Donald B. Melville. The Reaction Sequence in Ergothioneine Biosynthesis: Hercynine as an Intermediate, 1615

Astwood, E. B. See *Barrett, Friesen, and Astwood*, 432

Atherton, N. M. See *Massey and Atherton*, 2965

August, J. T., Priscilla J. Ortiz, and Jerard Hurwitz. Ribonucleic Acid-dependent Ribonucleotide Incorporation. I. Purification and Properties of the Enzyme, 3786

Aurbach, G. D., and William B. Jakoby. The Multiple Functions of Thiooxidase, 565

Avi-Dor, Y., John M. Olson, Mary D. Doherty, and Nathan O. Kaplan. Fluorescence of Pyridine Nucleotides in Mitochondria, 2377

Avigad, Gad, D. Amaral, C. Asensio, and B. L. Horecker. The D-Galactose Oxidase of *Polyporus circinatus*, 2736

Avron, Mordhay. Light-dependent Adenosine Triphosphatase in Chloroplasts, 2011

Axelrod, Julius. Purification and Properties of Phenylethanolamine-*N*-methyl Transferase, 1657

B

Bachrach, Uriel. Spermidine Oxidase from *Serratia marcescens*, 3443

Bacila, Metry. See *Chakravorty, Veiga, Bacila, and Horecker*, 1014

Baer, Erich, and Fritz Eckstein. Phosphatidylthreonines. I. Synthesis of Distearoyl-L-α-glycerylphosphoryl-L-threonine, 1449

Baglioni, Corrado. A Chemical Study of Hemoglobin Norfolk, 69

Bain, James A. See *Lyon, Bain, and Williams*, 1989

Baker, J. R., and Sterling Chaykin. The Biosynthesis of Trimethylamine-*N*-Oxide, 1309

de Balbian Verster, F. See *Sellinger and de Balbian Verster*, 2836

Ballou, Clinton E. See *Brockerhoff and Ballou*, 49, 1764

Bamji, Mahtab S., H. R. Cama, and P. R. Sundaresan. Anhydrovitamin A_2 and Rehydrovitamin A_2. II, 2747

Banerjee, Arun Baran, and N. C. Ganguli. Metabolic Studies on Scorbutic Guinea Pigs. II. Hepatic Glycogen Synthesis *in Vitro* and *in Vivo*, 14

Barban, Stanley. Studies on the Mechanism of Resistance to 2-Deoxy-D-glucose in Mammalian Cell Cultures, 291

Bar-Eli, Atara. See *Glazer, Bar-Eli, and Katchalski*, 1832

Barker, H. A. See *Brady, Castanera, and Baker*, 2325

—. See *Hogenkamp, Ladd, and Barker* 1950

Barner, Hazel D. See *Cohen and Barner*, PC1376

Barnett, L. M. See *Sekine, Barnett, and Kielley*, 2769

Barnum, Cyrus P. See *Ives and Barnum*, 2599

Barondes, Samuel H. The Influence of Neuroamines on the Oxidation of Glucose by the Anterior Pituitary. I. The Role of Monoamine Oxidase, 204

Barrett, Richard J., Henry Friesen, and E. B. Astwood. Characterization of Pituitary and Peptide Hormones by Electrophoresis in Starch Gel, 432

Barron, E. J., and P. K. Stumpf. Evidence for Separate Pathways for the Biosynthesis of Saturated and Unsaturated Fatty Acids by an Avocado Enzyme System, PC613

Bartsch, Robert G. See *Dus, Bartsch, and Kamen*, 3083

Basinski, D. See *Watari, Kearney, Singer, Basinski, Hauber, and Lusty*, PC1731

Basso, Lawrence V., D. Rajagopal Rao, and Victor W. Rodwell. Metabolism of Pipecolic Acid in a *Pseudomonas* Species. II. Δ^1-Piperideine-6-carboxylic Acid and α-Aminoadipic Acid-δ-semialdehyde, 2239

Baum, William E. See *Carpenter and Baum*, 409

Beattie, Diana S. See *Segal, Beattie, and Hopper*, 1914

Beck, William S. See *Bertles and Beck*, 3770

Behrman, E. J. See *Goldstein, Knox, and Behrman*, 2855

Beinert, Helmut, and Wilhelm R. Frisell. The Functional Identity of the Electron-transferring Flavoproteins of the Fatty Acyl Coenzyme A and Sarcosine Dehydrogenase Systems, 2988

—, **D. E. Griffiths, David C. Wharton, and R. H. Sands.** Properties of the Copper Associated with Cytochrome Oxidase as Studies by Paramagnetic Resonance Spectroscopy, 2337

Belkhode, M. L., and M. C. Nath. The Conversion of C^{14}-labeled Glucose Cycloacetoacetate to L-Ascorbic Acid in Germinating *Phaseolus radiatus*, 1742

Bellis, D. M. See *Stoker and Bellis*, 2303

Belman, Sidney, and Walter Troll. The Interaction of 2-Amino-1-naphthol with Bovine Serum Albumin and Cytochrome *c* in Relation to Its Effect on Rat Bladder, 746

Bennett, Edward L., Jack B. Drori, David Krech, Mark R. Rosenzweig, and S. Abraham. Hexokinase Activity in Brain, 1758

Bentley, Ronald, D. S. Bhate, and John G. Keil. Tetronic Acid Biosynthesis in Molds. I. Formation of Carlosic and Carolic Acids in *Penicillium charlesii*, 859

—, and **John G. Keil.** Tetronic Acid Biosynthesis in Molds. II. Formation of Penicillic Acid in *Penicillium cyclopium*, 867

—. See *Lavate, Dyer, Springer, and Bentley*, PC2715

Berger, Arieh. See *Potts, Berger, Cooke, and Anfinsen*, 1851

—. See *Sarid, Berger, and Katchalski*, 2207

Bergstrom, Sune, and Bengt Samuelsson. Isolation of Prostaglandin E_1 from Human Seminal Plasma. II. Prostaglandins and Related Factors, PC3005

Berl, Soll, Genkichiro Takagaki, Donald D. Clarke, and Heinrich Waelsch. Metabolic Compartments *in Vivo*. Ammonia and Glutamic Acid Metabolism in Brain and Liver, 2562

—, —, —, and —. Carbon Dioxide Fixation in the Brain, 2570

Berliner, David L., David M. Cazes, and Charles J. Nabors, Jr. Adrenal 3β-Hydroxysteroid Dehydrogenase Activity on C_{17}-hydroxylated Δ^5-Pregnenes, C_{12}-hydroxylated Δ^5-Pregnenes, or Both, 2478

Bernardi, Giorgio, and Georg F. Springer. Properties of Highly Purified Fucan, 75

Bertino, Joseph R., Barbara Simmons, and Dennis M. Donohue. Purification and Properties of the Formate-activating Enzyme from Erythrocytes, 1314

Bertles, John F., and William S. Beck. Biochemical Aspects of Reticulocyte Maturation. I. Fate of the Ribonucleic Acid, 3770

Bhate, D. S. See *Bentley, Bhate, and Keil*, 859

Biggs, H. G. See *Doumas and Biggs*, 2306

Black, Clanton C., John F. Turner, Martin Gibbs, D. W. Krogmann, and Solon A. Gordon. Studies on Photosynthetic Processes. II. Action Spectra and Quantum Requirement for Triphosphopyridine Nucleotide Reduction and the Formation of Adenosine Triphosphate by Spinach Chloroplasts, 580

—. See *Turner, Black, and Gibbs*, 577

Blacklow, Robert S., and Leonard Warren. Biosynthesis of Sialic Acids by *Neisseria meningitidis*, 3520

—. See *Warren and Blacklow*, 3527

Blakley, R. L., and Barbara M. McDougall. The Biosynthesis of Thymidylic Acid. III. Purification of

Thymidylate Synthetase and Its Spectrophotometric Assay, 812
—. See *Ramasastri and Blakley*, 1982
Bloch, Konrad. See *Childs and Bloch*, 62
—. See *Lennarz, Scheuerbrandt, and Bloch*, 664
—. See *Light, Lennarz, and Bloch*, 1793
—. See *Scheuerbrandt and Bloch*, 2064
Bloom, Ben, and **Daniel W. Foster.** Source of Phosphoenolpyruvate for Hexose Synthesis in Liver and Muscle as Studied with Aspartate-3-C^{14}, 2744
Bloom, Sandra J., and **Marvin J. Johnson.** The Pyruvate Carboxylase of *Aspergillus niger*, 2718
Bodansky, Oscar. See *Green and Bodansky*, 1752
Bojanowski, R. See *Valentine, Bojanowski, Gaudy, and Wolfe*, 2271
Bollum, F. J. Oligodeoxyribonucleotide-primed Reactions Catalyzed by Calf Thymus Polymerase, 1945
Bonaduce, Luisa. See *Scarano, Bonaduce, and De Petrocellis*, 3742
Bonsignore, A., S. Pontremoli, G. Mangiarotti, A. De Flora, and **M. Mangiarotti.** A Direct Interconversion: D-Fructose 6-Phosphate ⇌ Sedoheptulose 7-Phosphate and D-Xylose 5-Phosphate Catalyzed by the Enzymes Transketolase and Transaldolase, 3597
Bowman, Edward R. See *McKennis, Turnbull, Schwartz, Tamaki, and Bowman*, 541
Boyd, John E. See *Fish, Boyd, and Stokes*, 334
Boyer, P. D., M. DeLuca, K. E. Ebner, D. E. Hultquist, and **J. B. Peter.** Identification of Phosphohistidine in Digests from a Probable Intermediate of Oxidative Phosphorylation, PC3306
—. See *Kaziro, Hass, Boyer, and Ochoa*, 1460
Bradlow, H. Leon. See *Fukushima and Bradlow*, PC975
—. See *Fukushima, Bradlow, Hellman, and Gallagher*, 3359
Brady, Roscoe O. Studies on the Total Enzymatic Synthesis of Cerebrosides, PC2416
—, **Esther G. Castanera,** and **H. A. Barker.** The Enzymatic Synthesis of Cobamide Coenzymes, 2325
Brahms, Jerzy, and **Cyril M. Kay.** The Role of Solvent-induced Conformational Changes on the Enzymatic Adenosine Triphosphatase Activity of Cardiac Myosin A, 3449
Bremer, Jon. Carnitine in Intermediary Metabolism. Reversible Acetylation of Carnitine by Mitochondria, 2228
—. Carnitine in Intermediary Metabolism. The Metabolism of Fatty Acid Esters of Carnitine by Mitochondria, 3628
Breslow, Esther. Role of the Heme in the Titration of Sperm Whale Myoglobin, PC3308
—, and **Frank R. N. Gurd.** Reactivity of Sperm Whale Metmyoglobin towards Hydrogen Ions and *p*-Nitrophenyl Acetate, 371
Bressler, Rubin, and **Salith J. Wakil.** Studies on the Mechanism of Fatty Acid Synthesis. XI. The Product of the Reaction and the Role of Sulfhydryl Groups in the Synthesis of Fatty Acids, 1441
—. See *Wakil and Bressler*, 687
Bridgers, William F., and **Seymour Kaufman.** The Enzymatic Conversion of Epinine to Epinephrine, 526
Brierley, Gerald. See *Fleischer, Brierley, Klouwen, and Slautterback*, 3264
Brockerhoff, Hans, and **Clinton E. Ballou.** Phosphate Incorporation in Brain Phosphoinositides, 49
—, and —. On the Metabolism of the Brain Phosphoinositide Complex, 1764
Brodie, Arnold F. See *Asano, Brodie, Wagner, Wittreich, and Folkers.* PC2411
Brody, O. V. See *Eylar, Madoff, Brody, and Oncley*, 1992
Bronk, J. Ramsey, and **M. Sylvia Bronk.** The Influence of Thyroxine on Oxidative Phosphorylation in Mitochondria from Thyroidectomized Rats, 897
Bronk, M. Sylvia. See *Bronk and Bronk*, 897
Brown, David H. See *Kornfeld and Brown*, 1772
Brown, Douglas M. See *Perkoff, Hill, Brown, and Tyler* 2820
Brown, Gene M. The Biosynthesis of Folic Acid. II. Inhibition by Sulfonamides, 536
—. See *Reynolds and Brown*, PC2713
Brown, George Bosworth. See *Scott and Brown*, 3215
—. See *Thomson, Scotto, and Brown*, 3510
Brown, J. B. See *Fishman, Brown, Hellman, Zumoff, and Gallagher*, 1489
Brown, Ray K. Studies on the Antigenic Structure of Ribonuclease. III. Inhibition by Peptides of Antibody to Performic Acid-oxidized Ribonuclease, 1162
Brown, W. Duane, Marino Martinez, Margery Johnstone, and **Harold S. Olcott.** Comparative Biochemistry of Myoglobins, 81
Brunetti, Paolo, George W. Jourdian, and **Saul Roseman.** The Sialic Acids. III. Distribution and Properties of Animal *N*-Acetylneuraminic Aldolase, 2447
Brunish, Robert. The Nature of the Lacrimal Mucoprotein Stimulated by Exophthalamos-producing Substance, 2816
Buchanan, John M. See *Miller and Buchanan*, 485, 491
Buckley, C. E. See *Tanford, Buckley, De, and Lively*, 1168
Bu'Lock, J. D., H. M. Smalley, and **G. N. Smith.** Malonate as a Biosynthetic Intermediate in *Penicillium urticae*, 1778
Butcher, R. W., and **Earl W. Sutherland.** Adenosine 3′,5′-Phosphate in Biological Materials. I. Purification and Properties of Cyclic 3′,5′-Nucleotide Phosphodiesterase and Use of this Enzyme to Characterize Adenosine 3′,5′-Phosphate in Human Urine, 1244
Butte, John C. See *Kaneda, Butte, Taubman, and Corcoran*, 322
Byerrum, Richard U. See *Wu, Griffith, and Byerrum*, 887
Byers, Sanford O., Meyer Friedman, and **Toshiko Sugiyama.** Mechanism Underlying Phosphatide-induced Hypercholesterolemia, 3375

C

Cabib, Enrico. See *Algranati and Cabib*, 1007
Cahill, George F., Jr. See *Leboeuf, Renold, and Cahill*, 988
Caldwell, K. A. See *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday*, 2678
Cama, H. R. See *Bamji, Cama, and Sundaresan*, 2747
Cammarata, Peter S. See *Mazur, Ellis, and Cammarata*, 1619
Campagnari, Francesco. See *Webster and Campagnari*, 1050
Campo, Robert D., and **Dominic D. Dziewiatkowski.** Intracellular Syn-

thesis of Protein-polysaccharides by Slices of Bovine Costal Cartilage, 2729

Campos, Iris. See *Segovia-Riquelme, Campos, Solodkowska, Gonzalez, Alvarado, and Mardones,* 2038

Canady, W. J. See *Miles, Morey, Crain, Gross, San Julian, and Canady,* 1319

Canfield, Thomas S. See *Van Pilsum and Canfield,* 2574

Cann, John R. Electrophoretic Demonstration of Specific Enzyme-Substrate Complex between Pepsin and Serum Albumin. II. Inhibition of Complex Formation by Acetyl-L-tryptophan and Fatty Acids, 707

Cantoni, G. L. See McCully and Cantoni, 3760

Caputo, Antonio. See *Antonini, Wyman, Rossi-Fanelli, and Caputo,* 2773

Carlin, Harold, and **Oscar Hechter.** The Disulfide-Sulfhydryl Interchange as a Mechanism of Insulin Action, PC1371

Carlson, Don M., and **R. G. Hansen.** The Isolation and Synthesis of Guanosine Diphosphate Glucose, 1260

Carlton, Bruce C., and **Charles Yanofsky.** The Amino-terminal Sequence of the A Protein of Tryptophan Synthetase of *Escherichia coli,* 1531

Carpenter, Frederick H., and **William E. Baum.** Rates of Production of Alanine and Heptapeptide and of Loss of Biological Activity during Digestion of Insulin with Trypsin, 409

—, and **Andreas Chrambach.** On the Amide Content of Insulin Fractions Isolated by Partition Column Chromatography and Countercurrent Distribution, 404

Carroll, William R. See *Saroff and Carroll,* 3384

Caspi, Eliahu, Ralph I. Dorfman, Badar T. Khan, George Rosenfeld, and **Walter Schmid.** Degradation of Corticosteroids. VI. Origin of the Carbon Atoms of Steroid Hormones Biosynthesized *in Vitro* in the Bovine Adrenal from Acetate-1-C^{14}, 2085

Castanera, Esther G. See *Brady, Castanera, and Barker,* 2325

Caughey, Winslow S., and **Lyndal J. York.** Isolation and Some Properties of the Green Heme of Cytochrome Oxidase from Beef Heart Muscle PC2414

Cavalieri, Liebe F. See *Hamilton, Cavalieri, and Petermann,* 1155

Cazes, David M. See *Berliner, Cazes, and Nabors,* 2478

Cebra, John J., **David Givol,** and **Ephraim Katchalski.** Soluble Complexes of Antigen and Antibody Fragments, 751

—. See *Silman, Cebra, and Givol,* 2196

Chaikoff, I. L. See *Werbin, Chaikoff, and Imada,* 2072

Chakravorty, M., L. A. Veiga, Metry Bacila, and **B. L. Horecker.** Pentose Metabolism in Candida. II. The Diphosphopyridine Nucleotide-specific Polyol Dehydrogenase of *Candida utilis,* 1014

Chance, Britton, and **Bunji Hagihara.** Activation and Inhibition of Succinate Oxidation following Adenosine Diphosphate Supplements to Pigeon Heart Mitochondria, 3540

—, and **Gergory R. Schonbaum.** The Nature of the Primary Complex of Catalase, 2391

Chao, F. C. See *Henning, Helinski, Chao, and Yanofsky,* 1523

Chaudhuri, Amala C., Yoshimichi Harada, Kyutaro Shimizu, Marcel Gut, and **Ralph I. Dorfman.** Biosynthesis of Pregnenolone from 22-Hydroxycholesterol, 703

Chaykin, Sterling. See *Baker and Chaykin,* 1309

Chen, I-Wen. See *Glick, Chen, and Zilliken,* 981

Chervenka, Charles H. The Differentiation of Two Forms of Chymotrypsin by Their Rates of Urea Denaturation, 2105

Chi, Y.-M. See *Klainer, Chi, Freidberg, Rall, and Sutherland,* 1239

—. See *Murad, Chi, Rall, and Sutherland,* 1233

Chichester, C. O. See *Yokoyama, Nakayama, and Chichester,* 681

Childs, C. R., Jr., and **Konrad Bloch.** Further Observations on the Biosynthesis of Squalene, 62

Chrabas, Marilyn F. See *Isselbacher, Chrabas, and Quinn,* 3033

Chrambach, Andreas. See *Carpenter and Chambach,* 404

Christensen, Halvor N., and **Judith C. Jones.** Amino Acid Transport Models: Renal Resorption and Resistance to Metabolic Attack, 1203

—. See *Akedo and Christensen,* 113, 118

—. See *Dempsey and Christensen,* 1113

Clark, J. M., Jr., and **Jaime P. Eyzaguirre.** Tyrosine Activation and Transfer to Soluble Ribonucleic Acid. I. Purification and Study of the Enzyme of Hog Pancreas, 3698

Clark, Patricia, Michael R. Rachinsky, and **Joseph F. Foster.** Moving Boundary Electrophoresis Behavior and Acid Isomerization of Human Mercaptalbumin, 2509

—. See *Foster and Clark,* 3163

Clarke, Donald D. See *Berl, Takagaki, Clarke, and Waelsch,* 2562, 2570

Clayton, R. B. See *Frantz, Sanghvi, and Clayton,* 3381

Cohen, Seymour S., and **Hazel D. Barner.** Spermidine in the Extraction of the Deoxyribosyl-synthesizing Systems from T6r$^+$-infected *Escherichia coli,* PC1376

—. See *Pizer and Cohen,* 1251

—. See *Tono and Cohen,* 1271

Cohen, Stanley. Isolation of a Mouse Submaxillary Gland Protein Accelerating Incisor Eruption and Eyelid Opening in the New-born Animal, 1555

Cohn, David V., and **Bernard K. Forscher.** Aerobic Metabolism of Glucose by Bone, 615

Cohn, Mildred, and **Thomas R. Hughes, Jr.** Nuclear Magnetic Resonance Spectra of Adenosine Di- and Triphosphate. II. Effect of Complexing with Divalent Metal Ions, 176

Coleman, Joseph E., and **Bert L. Vallee.** Apocarboxypeptidase - Substrate Complexes, 3430

Collipp, P. J. See *Mackler, Collipp, Duncan, Rao, and Huennekens,* 2968

Comb, Donald G. The Enzymatic Addition of D-Alanyl-D-alanine to a Uridine Nucleotide-peptide 1601

Conn, Eric E. See *Kosuge and Conn,* 1653

—. See *Koukol, Miljanich, and Conn,* 3223

Connelly, Carol. See *Smith, Connelly, and Smead,* 3207

Contrera, J. F. See *Goldstein and Contrera,* 1898

Conway, Thomas W., Edwin M. Lansford, Jr., and **William Shive.** Purification and Substrate Specificity of a Phenylalanine - activating Enzyme from *Escherichia coli* 9723, 2850

Cooke, Juanita. See *Potts, Berger, Cooke and Anfinsen,* 1851

Cooke, Juanita P. See *Anfinsen, Sela, and Cooke,* 1825

Cooksey, Keith E. See *Rothstein, Cooksey, and Greenberg,* 2828

Cooper, Cecil. See *Kulka and Cooper*, 936
Corcoran, Betty J. See *Alexander and Corcoran*, 243
Corcoran, John W. See *Kaneda, Butte, Taubman, and Corcoran*, 322
Cori, Carl F. See *Özand, Narahara, and Cori*, 3037
Cormier, Milton J. Studies on the Bioluminescence of *Renilla reniformis*. II. Requirement for 3′,5′-Diphosphoadenosine in the Luminescent Reaction, 2032
Cornfield, Jerome. See *Folk, Wolff, Schirmer, and Cornfield*, 3105
Cornforth, J. W. See *Popják, Cornforth, Cornforth, Ryhage, and Goodman*, 56
Cornforth, Rita H. See *Popják, Cornforth, Cornforth, Ryhage, and Goodman*, 56
Corrigan, John J. See *Srinivasan, Corrigan, and Meister*, PC3844
Corse, J. W. See *Finkle, Lewis, Corse, and Lundin*, 2926
Craig, Lyman C. See *Hill, Konigsberg, Guidotti, and Craig*, 1549
Crain, F. See *Miles, Morey, Crain, Gross, San Julian, and Canady*, 1319
Crampton, Charles F. See *Frankel and Crampton*, 3200
Crawford, Elizabeth J. See *Friedkin, Crawford, Donovan, and Pastore*, 3811
Cronin, John R. See *Frisell, Cronin, and Mackenzie*, 2975
Curran, Jean F. See *Tomkins, Yielding, and Curran*, 1704

D

Danielsson, Henry, Peter Eneroth, Kjell Hellström, and **Jan Sjövall.** Synthesis of Some 3β-Hydroxylated Bile Acids and the Isolation of 3β,12α-Dihydroxy-5β-cholanic Acid from Feces. Bile Acids and Steroids 123, 3657
Danishefsky, I., Harold B. Eiber, and **Esther Langholtz.** Investigations on the Chemistry of Heparin. III. Reduction and Hydrolysis, 1413
Daughaday, William H., and **Ida Kozak Mariz.** The Formation of Free Hydroxyproline by Rat Cartilage *in Vitro*, 2831
Davidson, Eugene A. See *Jacobson and Davidson*, 635, 638
Davis, Leodis, and **David E. Metzler.** The pH Dependence of the Kinetic Parameters of Threonine Dehydrase, 1883
Davis, Raymond V. See *Minard and Davis*, 1283
Dawson, Charles R. See *Stark and Dawson*, 712
De, Paritosh K. See *Tanford, Buckley, De, and Lively*, 1168
De Flora, A. See *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti*, 3597
Deiss, William P., Jr., Leila B. Holmes, and **C. Conrad Johnston, Jr.** Bone Matrix Biosynthesis *in Vitro*. I. Labeling of Hexosamine and Collagen of Normal Bone, 3555
—. See *Johnston, Deiss, and Miner*, 3560
Deitrich, Richard A., Leslie Hellerman, and **John Wein.** Diphosphopyridine Nucleotide-linked Aldehyde Dehydrogenase. I. Specificity and *Sigma-Rho* Function, 560
Dekker, Eugene E., and **Umadas Maitra.** Conversion of γ-Hydroxyglutamate to Glyoxylate and Alanine; Purification and Properties of the Enzyme System, 2218
DeLuca, H. F. See *Engstrom and DeLuca*, PC974
DeLuca, M. See *Boyer, DeLuca, Ebner, Hultquist, and Peter*, PC3306
Dempsey, Walter B., and **Halvor N. Christensen.** The Specific Binding of Pyridoxal 5′-Phosphate to Bovine Plasma Albumin, 1113
De Petrocellis, Benita. See *Scarano, Bonaduce, and De Petrocellis*, 3742
Desai, I. D. See *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday*, 2678
Deykin, Daniel, and **DeWitt S. Goodman.** The Hydrolysis of Long Chain Fatty Acid Esters of Cholesterol with Rat Liver Enzymes, 3649
Diamondstone, Thomas I. See *Litwack and Diamondstone*, 469
Dick, Arthur. See *Sacktor and Dick*, 3259
Dietrich, L. S. See *Friedland, Fuller, and Dietrich*, 3829
Dishmon, Guinn. See *Heimberg, Weinstein, Dishmon, and Dunkerley*, 3623
Dodson, R. Gene. See *Vanderheiden, Meinhart, Dodson, and Krebs*, 2095
Doe, R. P. See *Seal and Doe*, 3136
Doherty, Mary D. See *Avi-Dor, Olson, Doherty, and Kaplan*, 2377
Dole, Vincent P. Insulin-like Actions of Ribonucleic Acid, Adenylic Acid, and Adenosine, 2758
Dolin, M. I. Polynucleotide Phosphorylase of *Clostridium perfringens*. I. Effect of Basic Polypeptides on Polyribonucleotide Synthesis, 1626
Donaldson, Kenneth O., and **John C. Keresztesy.** Naturally Occurring Forms of Folic Acid. II. Enzymatic Conversion of Methylenetetrahydrofolic Acid to Prefolic A-Methyltetrahydrofolate, 1298
—, and —. Naturally Occurring Forms of Folic Acid. III. Characterization and Properties of 5-Methyldihydrofolate, an Oxidation Product of 5-Methyltetrahydrofolate, 3815
Donermeyer, D. D. See *Williams and Donermeyer*, 2123
Donohue, Dennis M. See *Bertino, Simmons, and Donohue*, 1314
Donovan, Elaine. See *Freidkin, Crawford, Donovan, and Pastore*, 3811
Doolittle, Russell F., J. Lawrence Oncley, and **Douglas M. Surgenor.** Species Differences in the Interaction of Thrombin and Fibrinogen, 3123
Dorfman, Albert. See *Markovitz and Dorfman*, 273
Dorfman, Ralph I. See *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085
—. See *Chaudhuri, Harada, Shimizu, Gut, and Dorfman*, 703
—. See *Sharma, Forchielli, and Dorfman*, 1495
—. See *Shimizu, Gut, and Dorfman*, 699
Doudoroff, Michael. See *Shuster and Doudoroff*, 603
Doumas, Basil, and **H. G. Biggs.** The Nonenzymatic Decomposition of 5-Methylbarbituric Acid, 2306
Downing, Sylvia J. See *Rosenberg, Downing, and Segal*, 2265
Drabikowski, W., and **J. Gergely.** The Effect of the Temperature of Extraction on the Tropomyosin Content in Actin, 3412
Drabkin, David L., and **C. David Wise.** Creation of a Crystalline Interspecies Hybrid of Hemoglobin at pH Close to Neutrality, PC261
Drori, Jack B. See *Bennett, Drori, Krech, Rosenzweig, and Abraham*, 1758
Drummond, George I., N. T. Iyer, and **Jacqueline Keith.** Hydrolysis of Ribonucleoside 2′,3′-Cyclic Phosphates by a Diesterase from Brain, 3535
Ducay, Eufemio D. See *Mandeles and Ducay*, 3196
Duerre, John A. A Hydrolytic Nucleosidase Acting on *S*-Adenosylho-

mocysteine and on 5′-Methylthioadenosine, 3737
Dulaney, John T. See *Liao, Dulaney, and Williams-Ashman*, 2981
Duncan, Helen M. See *Mackler, Collipp, Duncan, Rao, and Huennekens*, 2968
Dunkerley, Allen. See *Heimberg, Weinstein, Dishmon, and Dunkerley*, 3623
Durr, I. F. See *Kirtley, Rudney, and Durr*, 1781
Dus, Karl, Robert G. Bartsch, and **Martin D. Kamen.** The Diheme Peptide of *Chromatium* RHP, 3083
Dyer, J. R. See *Lavate, Dyer, Springer, and Bentley* PC2715
Dziewiatkowski, Dominic D. See *Campo and Dziewiatkowski*, 2729

E

Easley, Caroline W. See *Putnam, Tan, Lynn, Easley, and Migita*, 717
Ebata, Mitsuo, and **Kerry T. Yasunobu.** Chymopapain. I. Isolation, Crystallization, and Preliminary Characterization, 1086
Ebner, K. E. See *Boyer, DeLuca, Ebner, Hultquist, and Peter*, PC3306
Eckstein, Fritz. See *Baer and Eckstein*, 1449
Edelhoch, Harold. The Properties of Thyroglobulin. VIII. The Iodination of Thyroglobulin, 2778
—, and **R. E. Lippoldt.** The Properties of Thyroglobulin. IX. The Molecular Properties of Iodinated Thyroglobulin, 2788
Edmonds, Mary, and **Richard Abrams.** Nature of a Polynucleotide Required for Polyribonucleotide Formation from Adenosine Triphosphate with an Enzyme from Thymus Nuclei, 2636
Edsall, John T. See *Allerton, Elwyn, Edsall, and Spahr*, 85
—. See *Rickli and Edsall*, PC258
Eiber, Harold B. See *Danishefsky, Eiber, and Langholtz*, 1413
Eichel, Herbert J., and **Leona T. Rem.** Respiratory Enzyme Studies in *Tetrahymena pyriformis*. V. Some Properties of an L-Lactic Oxidase, 940
Eichhorn, G. L. See *Osbahr and Eichhorn*, 1820
Ellis, Bernice W. See *Mazur, Ellis, and Cammarata*, 1619
Elwyn, David. See *Allerton, Elwyn, Edsall, and Spahr*, 85
Eneroth, Peter. See *Danielsson, Eneroth, Hellström, and Sjövall*, 3657
Engel, Lewis L. See *Weliky and Engel*, 2089
Engstrom, G. W., and **H. F. DeLuca.** The Action of Vitamin D *in Vivo* and *in Vitro* on the Release of Calcium from Kidney Mitochondria, PC974
Epstein, Charles J., and **Christian B. Anfinsen.** The Reversible Reduction of Disulfide Bonds in Trypsin and Ribonuclease Coupled to Carboxymethyl Cellulose, 2175
—, and —. Reversible Reduction and Reoxidation of Poly-DL-alanyl Trypsin, 3464
—, —, and **Michael Sela.** The Properties of Poly-DL-alanyl Trypsin and Poly-DL-alanyl Chymotrypsin, 3458
Escobar del Rey, Francisco. See *Morreale de Escobar, Escobar del Rey, and Llorente Rodriquez*, PC2041
Espada, Joaquin. Enzymic Synthesis of Adenosine Diphosphate Glucose from Glucose 1-Phosphate and Adenosine Triphosphate, 3577
Evans, Audry. See *Hurwitz, Furth, Anders, and Evans*, 3752
Eylar, Edwin H., and **Roger W. Jeanloz.** Oligosaccharides from the α_1 Acid Glycoprotein of Human Plasma, 622
—, and —. Periodate Oxidation of the α_1 Acid Glycoprotein of Human Plasma, 1021
—, **Morton A. Madoff, O. V. Brody,** and **J. L. Oncley.** The Contribution of Sialic Acid to the Surface Charge of the Erythrocyte, 1992
Eyzaguirre, Jaime P. See *Clark and Eyzaguirre*, 3698

F

Fahey, John L. Chromatographic Studies of Anomalous γ-, β_{2A}-, and Macroglobulins and Normal γ-Globulins in Myeloma and Macroglobulinemic Sera, 440
Falcone, A. B., Rose L. Mao, and **Earl Shrago.** A Study of the Action of Hypoglycemia-producing Biguanide and Sulfonylurea Compounds on Oxidative Phosphorylation, 904
Fanshier, D. W., L. K. Gottwald, and **E. Kun.** Enzymatic Synthesis of Monofluorocitrate from β-Fluoro-oxaloacetate, 3588
Fawcett, Colvin P., and **Nathan O. Kaplan.** Preparation and Properties of Some Nicotinamide Adenine Dinucleotide Analogues with Pentose and Purine Modifications, 1709
Feeley, John. See *Marcus and Feeley*, 221
Feigelson, Philip, and **Olga Greengard.** Regulation of Liver Tryptophan Pyrrolase Activity, 1908
—, and —. Immunochemical Evidence for Increased Titers of Liver Tryptophan Pyrrolase during Substrate and Hormonal Enzyme Induction, 3714
—. See *Greengard and Feigelson*, 1903
Fellner, Susan K. See *Leibman and Fellner*, 2213
Felsenfeld, Herbert. See *Warren and Felsenfeld*, 1421
Feng, Jan-Yung. See *Halenz, Feng, Hegre, and Lane*, 2140
Field, James B. See *Pastan, Herring, Johnson, and Field*, 287
Fink, Kay. See *Fink and Fink*, 2289, 2889
Fink, Robert M., and **Kay Fink.** Utilization of Radiocarbon from Thymidine and Other Precursors of Ribonucleic Acid in *Neurospora crassa*, 2289
—, and —. Relative Retention of H^3 and C^{14} Labels of Nucleosides Incorporated into Nucleic Acids of *Neurospora*, 2889
Finkle, Bernard J., J. C. Lewis, J. W. Corse, and **R. E. Lundin.** Enzyme Reactions with Phenolic Compounds: Formation of Hydroxystyrenes through the Decarboxylation of 4-Hydroxycinnamic Acids by *Aerobacter*, 2926
Fischer, Edmond H. See *Hughes, Yunis, Krebs, and Fischer*, 40
—. See *Yunis, Fischer, and Krebs*, 2809
Fish, William A., John E. Boyd, and **William M. Stokes.** Metabolism of Cholesterol in the Chick Embryo. III. Localization and Turnover of Desmosterol (24-Dehydrocholesterol), 334
Fisher, E., Jr. See *Peck and Fisher*, 190
Fisher, J. M. See *Rabinovitz and Fisher*, 477
Fishman, Jack, J. B. Brown, Leon Hellman, Barnett Zumoff, and **T. F. Gallagher.** Estrogen Metabolism in Normal and Pregnant Women, 1489
Fishman, William H. See *Pettengill and Fishman*, 24
Flanagan, Barry, and **George Nichols, Jr.** Metabolic Studies of Bone *in Vitro*. IV. Collagen Biosynthesis by Surviving Bone Fragments *in Vitro*, 3686
Flavin, Martin. Microbial Transsulfuration: the Mechanism of an En-

zymatic Disulfide Elimination Reaction, 768

Fleischer, Sidney, Gerald Brierley, Herman Klouwen, and **David B. Slautterback.** Studies of the Electron Transfer System. XLVII. The Role of Phospholipids in Electron Transfer, 3264

Folk, J. E., Edith Clarke Wolff, and **E. W. Schirmer.** The Kinetics of Carboxypeptidase B Activity. II. Kinetic Parameters of the Cobalt and Cadmium Enzymes, 3100

—, —, —, and **Jerome Cornfield.** The Kinetics of Carboxypeptidase B Activity. III. Effects of Alcohol on the Peptidase and Esterase Activities; Kinetic Models, 3105

—. See *Wolff, Schirmer, and Folk*, 3094

Folkers, Karl. See *Asano, Brodie, Wagner, Wittreich, and Folkers*, PC2411

Forchielli, Enrico. See *Ringold, Ramachandran, and Forchielli*, PC260

—. See *Sharma, Forchielli, and Dorfman*, 1495

Forscher, Bernard K. See *Cohn and Forscher*, 615

Foster, Daniel W. See *Bloom and Foster*, 2744

Foster, Joseph F., and **Patricia Clark.** A Re-examination of the Acid Titration Behavior of Human Mercaptalbumin. Changes in Amphoteric Properties Associated with the N–F Transformation, 3163

—. See *Clark, Rachinsky, and Foster*, 2509

—. See *Sogami and Foster*, 2514

Fowler, L. R. See *Hatefi, Haavik, Fowler, and Griffiths*, 2661

Frankel, Fred R., and **Charles E. Crampton.** Chromatographic Fractionation of Deoxyribonucleic Acids. 3200

Frantz, Ivan D., Jr., Ajitkumar T. Sanghvi, and **R. B. Clayton.** Detection of a Sterol with the Probable Structure $\Delta^{5,7,24}$-Cholestatrien-3β-ol in the Intestinal Wall of Guinea Pigs Treated with Triparanol, 3381

Freidberg, S. L. See *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239

Fresco, Jacques R., and **Der-Fen Su.** Polynucleotides. IV. Synthesis of Polyriboguanylic Acid Catalyzed by Polynucleotide Phosphorylase, PC3305

Fridovich, Irwin. Competitive Inhibition by Myoglobin of the Reduction of Cytochrome *c* by Xanthine Oxidase, 584

—, and **Philip Handler.** Xanthine Oxidase. V. Differential Inhibition of the Reduction of Various Electron Acceptors, 916

—. See *Rajagopalan, Fridovich, and Handler*, 922

Frieden, Carl. The Effect of pH and Other Variables on the Dissociation of Beef Liver Glutamic Dehydrogenase, 2396

Friedkin, Morris, Elizabeth J. Crawford, Elaine Donovan, and **Edward J. Pastore.** The Enzymatic Synthesis of Thymidylate. III. The Further Purification of Thymidylate Synthetase and Its Separation from Natural Fluorescent Inhibitors, 3811

—. See *Pastore and Friedkin*, 3802

—. See *Wahba and Friedkin*, 3794

Friedland, Ira M., Laphalle Fuller, and **L. S. Dietrich.** Nicotinic Acid and Nicotinamide Metabolism in Ascites Cells *in Vitro* 3829

Friedman, L. See *Nelson, Hummel, Swenson, and Friedman*, 1575

Friedman, Meyer. See *Byers, Friedman, and Sugiyama*, 3375

Friesen, Henry. See *Barrett, Friesen, and Astwood*, 432

Frisell, Wilhelm R., John R. Cronin, and **Cosmo G. Mackenzie.** Coupled Flavoenzymes in Mitochondrial Oxidation of *N*-Methyl Groups. Purification of the Electron Transfer Flavoprotein, 2975

—, and **Cosmo G. Mackenzie.** Separation and Purification of Sarcosine Dehydrogenase and Dimethylglycine Dehydrogenase, 94

—. See *Beinert and Frisell*, 2988

Fritzson, Per. The Relation between Uracil-catabolizing Enzymes and Rate of Rat Liver Regeneration, 150

Froesch, E. R., and **J. L. Ginsberg.** Fructose Metabolism of Adipose Tissue. I. Comparison of Fructose and Glucose Metabolism in Epididymal Adipose Tissue of Normal Rats, 3317

Fromm, Herbert J., and **Dennis R. Nelson.** Ribitol Dehydrogenase. III. Kinetic Studies with Product Inhibition, 215

—, and **Virginia Zewe.** Kinetic Studies of the Brain Hexokinase Reaction, 1661

—, and —. Kinetic Studies of Yeast Hexokinase, 3027

—. See *Zewe and Fromm*, 1668

Fujino, Y., and **Irving Zabin.** The Configuration of Sphingosine Synthesized in Rat Brain Homogenates, 2069

Fujioka, Hideko, and **Kazutomo Imahori.** Studies on the Binding of Carboxypeptidase A and Several Competitive Inhibitors, 2804

Fukushima, David K., and **H. Leon Bradlow.** A New Metabolite of Testosterone, PC975

—, —, **Leon Hellman,** and **T. F. Gallagher.** Isolation and Characterization of 18-Hydroxy-17-ketosteroids, 3359

Fuller, Laphalle. See *Friedland, Fuller, and Dietrich*, 3829

Furth, J. J., Jerard Hurwitz, and **Monika Anders.** The Role of Deoxyribonucleic Acid in Ribonucleic Acid Synthesis. I. The Purification and Properties of Ribonucleic Acid Polymerase, 2611

—. See *Hurwitz, Furth, Anders, and Evans*, 3752

Futterman, Sidney. Enzymatic Oxidation of Vitamin A Aldehyde to Vitamin A Acid, 677

G

Gabriel, Othmar, and **Gilbert Ashwell.** Isolation of Uridine Diphosphate *N*-Acetylglucosamine-6-phospho-1-galactose from Hen Oviduct, 1400

Gallagher, T. F. See *Fishman, Brown, Hellman, Zumoff, and Gallagher*, 1489

—. See *Fukushima, Bradlow, Hellman, and Gallagher*, 3359

Gander, J. E. Incorporation of C^{14} into *p*-Hydroxymandelonitrile-β-glucose and other Phenolic Substances in Sorghum Seedlings, 3229

Ganguli, N. C. See *Banerjee and Ganguli*, 14

Gaudy, Elizabeth. See *Valentine, Bojanowski, Gaudy, and Wolfe*, 2271

Geller, David M. Oxidative Phosphorylation in Extracts of *Rhodospirillum rubrum*, 2947

Georgatsos, John G., W. C. Unterholzner, and **M. Laskowski, Sr.** Characterization of the Digestion Products of Deoxyribonucleic Acid by Purified Streptococcal Deoxyribonuclease (Streptodornase), 2626

Gerber, Georg B., Gisela Gerber, Thomas R. Koszalka, and **Leon L. Miller.** The Rate of Creatine Synthesis in the Isolated, Perfused Rat Liver, 2246

Gerber, Gisela. See *Gerber, Gerber, Koszalka, and Miller,* 2246
Gergely, J. See *Drabikowski and Gergely,* 3412
—. See *Maruyama and Gergely,* 1095, 1100
Gerhart, John C., and **Arthur B. Pardee.** The Enzymology of Control by Feedback Inhibition, 891
Gey, M. K. See *Hellerman, Reiss, and Gey,* 997
—. See *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber,* 992
Ghalambor, Mohammad Ali, and **Edward C. Heath.** The Metabolism of L-Fucose. II. The Enzymatic Cleavage of L-Fuculose 1-Phosphate, 2427
—. See *Heath and Ghalambor,* 2423
Gholson, R. K., Yasutomi Nishizuka, Arata Ichiyama, Hitoshi Kawai, Shigenobu Nakamura, and **Osamu Hayaishi.** New Intermediates in the Catabolism of Tryptophan in Mammalian Liver, PC2043
Gibbs, Martin. See *Anderson and Gibbs,* 1941
—. See *Black, Turner, Gibbs, Krogmann, and Gordon,* 580
—. See *Turner, Black, and Gibbs,* 577
Gibbs, Robert. See *Wynn and Gibbs,* 3499
—. See *Wynn, Gibbs, and Royster,* 1892
Giles, C. H., and **R. B. McKay.** Studies in Hydrogen Bond Formation. XI. Reactions between a Variety of Carbohydrates and Proteins in Aqueous Solutions, 3388
Gilvarg, Charles. The Branching Point in Diaminopimelic Acid Synthesis, 482
Ginsberg, J. L. See *Froesch and Ginsberg,* 3317
Ginsburg, Victor, Paul J. O'Brien, and **Clara W. Hall.** Guanosine Diphosphate D-*glycero*-D-*manno*-Heptose, 497
Givol, David. See *Cebra, Givol, and Katchalski,* 751
—. See *Silman, Cebra, and Givol,* 2196
Gjessing, Erland C., and **John C. Hartnett.** Crystallization and Characterization of an Esteroproteolytic Enzyme from Porcine Pancreas, 2201
Glaser, Luis. See *Kornfeld and Glaser,* 3052
Glazer, A. N., Atara Bar-Eli, and **Ephraim Katchalski.** Preparation and Characterization of Polytyrosyl Trypsin, 1832
Glazer, A. N., and **K. Rosenheck.** Solvent and Conformational Effects on the Ultraviolet Spectra of Polypeptides and Substituted Amides, 3674
Glick, David. See *Greenberg and Glick,* 3552
—. See *Parekh and Glick,* 280
Glick, Mary Catherine, I-Wen Chen, and **Friedrich Zilliken.** Formation *in Vitro* of 3-*O*-β-D-Galactopyranosyl-*N*-acetyl-D-glucosamine, Free and Phosphorylated, 981
Glimcher, Melvin J. See *Krane and Glimcher,* 2991
Goldberg, Melvin L., and **Efraim Racker.** Formation and Isolation of a Glycolaldehyde-Phosphoketolase Intermediate, PC3841
Goldman, Dexter S., and **Frank A. Lornitzo.** Enzyme Systems in the Mycobacteria. XII. The Inhibition of the Transglycosidase-catalyzed Formation of Trehalose 6-Phosphate, 3332
Goldstein, Leon, W. Eugene Knox, and **E. J. Behrman.** Studies on the Nature, Inducibility, and Assay of the Threonine and Serine Dehydrase Activities of Rat Liver, 2855
—, **E. J. Stella,** and **W. Eugene Knox.** The Effect of Hydrocortisone on Tyrosine-α-ketoglutarate Transaminase and Tryptophan Pyrrolase Activities in the Isolated, Perfused Rat Liver, 1723
Goldstein, M., and **J. F. Contrera.** The Substrate Specificity of Phenylamine-β-hydroxylase, 1898
Goldstone, Alfred, and **Elijah Adams.** Metabolism of γ-Hydroxyglutamic Acid. I. Conversion to α-Hydroxy-γ-ketoglutarate by Purified Glutamic-Aspartic Transaminase of Rat Liver, 3476
Gonzalez, Graciela. See *Segovia-Riquelme, Campos, Solodkowska, Gonzalez, Alvarado and Mardones,* 2038
Goodman, DeWitt S. See *Deykin and Goodman,* 3649
—. See *Popják, Cornforth, Cornforth, Ryhage, and Goodman,* 56
Gordon, Charles N. See *Shigeura and Gordon,* 1932, 1937
Gordon, Solon A. See *Black, Turner, Gibbs, Krogmann, and Gordon,* 580
Gottfried, Eugene L., and **Maurice M. Rapport.** The Biochemistry of Plasmalogens. I. Isolation and Characterization of Phosphatidal Choline, a Pure Native Plasmalogen, 329
Gottwald, L. K. See *Fanshier, Gottwald, and Kun,* 3588
Graae, John, and **Agnar P. Nygaard.** The Kinetics of Yeast D-Lactic Cytochrome *c* Reductase Studied by Means of Integrated Velocity Equations, 3255
Graf, Liselotte. See *Rapport, Schneider, and Graf,* 1056
Greco, Antoinette E. See *Maver and Greco,* 736
Green, D. W., F. S. Mathews, and **Alexander Rich.** The Crystal and Molecular Structure of *N*-Methyluracil, PC3573
Green, Saul, and **Oscar Bodansky.** Effect of Methylbis(β-chloroethyl)-amine (Nitrogen Mustard) on the Diphosphopyridine Nucleotidase Activity of Ehrlich Ascites Cells and the Role of This Effect in Glycolysis, 1752
Greenwalt, John W., Claes Weibull, and **Hans Löw.** The hydrolysis of Adenosine Triphosphate by Cell Fractions of *Bacillus megaterium,* 853
—. See *Weibull, Greenawalt, and Löw,* 847
Greenbaum, Lowell M., and **Raymond Sherman.** Studies on Catheptic Carboxypeptidase, 1082
Greenberg, Cyrus. See *Jorgensen, Lehman, Greenberg, and Zenker,* 3832
Greenberg, David M. See *Rothstein, Cooksey, and Greenberg,* 2828
Greenberg, Leonard J., and **David Glick.** Studies in Histochemistry. LXIX. Quantitative Histological Distribution of Totally Activated Phosphorylase in the Rat Adrenal and the Influence of Adrenocorticotropic Hormone *in Vivo,* 3552
Greene, Ronald C. Biosynthesis of Dimethyl-β-propiothetin, 2251
Greengard, Olga, and **Philip Feigelson.** The Purification and Properties of Liver Tryptophan Pyrrolase, 1903
—. See *Feigelson and Greengard,* 1908, 3714
Griffith, Thomas. See *Wu, Griffith, and Byerrum,* 997
Griffiths, D. E. See *Beinert, Griffiths, Wharton, and Sands,* 2337
—. See *Hatefi, Haavik, and Griffiths,* 1676, 1681
—. See *Hatefi, Haavik, Fowler, and Griffiths,* 2661
Grisolia, Santiago. See *Amelunxen and Grisolia,* 3240

Grisolia, Santiago. See *Novoa and Grisolia,* PC2710
—. See *Tucker and Grisolia,* 1068
Gross, Edward, and **Bernhard Witkop.** Nonenzymatic Cleavage of Peptide Bonds: The Methionine Residues in Bovine Pancreatic Ribonuclease, 1856
Gross, S. See *Miles, Morey, Crain, Gross, San Julian, and Canady,* 1319
Groth, D. P. See *Jiang and Groth,* 3339
Guidotti, Guido, Robert J. Hill, and **William Konigsberg.** The Structure of Human Hemoglobin. II. The Separation and Amino Acid Composition of the Tryptic Peptides from the α and β Chains, 2184
—. See *Hill, Konigsberg, Guidotti, and Craig,* 1549
Gurd, Frank R. N. See *Breslow and Gurd,* 371
Gurin, Samuel. See *Suld, Staple, and Gurin,* 338
Guroff, Gordon, and **Sidney Udenfriend.** Studies on Aromatic Amino Acid Uptake by Rat Brain *in Vivo.* Uptake of Phenylalanine and of Tryptophan; Inhibition and Stereoselectivity in the Uptake of Tyrosine by Brain and Muscle, 803
Guss, Judith K. See *Singer and Guss,* 182
Gut, Marcel. See *Chaudhuri, Harada, Shimizu, Gut, and Dorfman,* 703
—. See *Shimizu, Gut, and Dorfman,* 699

H

Haavik, A. G. See *Hatefi, Haavik, and Griffiths,* 1676, 1681
—. See *Hatefi, Haavik, Fowler, and Griffiths,* 2661
de la Haba, G. See *Nemeth and de la Haba,* 1190
Haber, Edgar, and **Christian B. Anfinsen.** Side-chain Reactions Governing the Pairing of Half-cystine Residues in Ribonuclease, 1839
Hackett, D. P. See *Shichi and Hackett,* 2955, 2959
Hagihara, Bunji. See *Chance and Hagihara,* 3540
Hahn, Chae Hee. See *Koeppe and Hahn,* 1026
Haight, Roger D. See *Mattoon and Haight,* 3486
Halenz, Donald R., Jan-Yung Feng, Carman S. Hegre, and **M. Daniel Lane.** Some Enzymic Properties of Mitochondrial Propionyl Carboxylase, 2140
Hall, Clara W. See *Ginsburg, O'Brien, and Hall,* 497
Hall, Ross H. Separation of Nucleic Acid Degradation Products on Partition Columns, 2283
Hamilton, Mary G., Liebe F. Cavalieri, and **Mary L. Petermann.** Some Physicochemical Properties of Ribonucleoprotein from Rat Liver Microsomes, 1155
Hammen, Carl S., and **Susan C. Lum.** Carbon Dioxide Fixation in Marine Invertebrates. III. The Main Pathway in Flatworms, 2419
Hammond, James B. See *Robbins and Hammond,* PC1379
Hampton, Alexander. Studies of the Action of Adenylosuccinase with 6-Thio Analogues of Adenylosuccinic Acid, 529
Handler, Philip. See *Fridovich and Handler,* 916
—. See *Joshi and Handler,* 929, 3185
—. See *Rajagopalan, Fridovich, and Handler,* 922
Hansen, R. G., Harland G. Wood, Georges J. Peeters, Birgit Jacobson, and **JoAnne Wilken.** Lactose Synthesis. VI. Labeling of Lactose Precursors by Glycerol-1,3-C^{14} and Glucose-2-C^{14}, 1034
—. See *Carlson and Hansen,* 1260
Harada, Yoshimichi. See *Chaudhuri, Harada, Shimizu, Gut, and Dorfman,* 703
Harkness, D. R. See *Heppel, Harkness, and Hilmoe,* 841
Harmison, Charles R., and **Walter H. Seegers.** Some Physicochemical Properties of Bovine Autoprothrombin II, 3074
Harrington, William F. See *Young, Harrington, and Kielley,* 3116
Hartley, Robert W., Jr. See *Price, Sterling, Tarantola, Hartley, and Rechcigl,* 3468
Hartnett, John C. See *Gjessing and Hartnett,* 2201
Hasewaga, Shin, and **Charles W. Nagel.** The Characterization of an α,β-Unsaturated Digalacturonic Acid, 619
Hashimoto, Yohichi, T. Yamano, and **H. S. Mason.** An Electron Spin Resonance Study of Microsomal Electron Transport, PC3843
Hass, L. F. See *Kaziro, Hass, Boyer, and Ochoa,* 1460
Hassid, W. Z. See *Watkins and Hassid,* 1432
Hatefi, Y., A. G. Haavik, and **D. E. Griffiths.** Studies on the Electron Transfer System. XL. Preparation and Properties of Mitochondrial DPNH-Coenzyme Q Reductase, 1676
—, —, and —. Studies on the Electron Transfer System. XLI. Reduced Coenzyme Q (QH_2)-Cytochrome *c* Reductase, 1681
—, —, **L. R. Fowler,** and **D. E. Griffiths.** Studies on the Electron Transfer System. XLII. Reconstitution of the Electron Transfer System, 2661
Hauber, J. See *Watari, Kearney, Singer, Basinski, Hauber, and Lusty,* PC1731
Hayaishi, Osamu. See *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi,* PC2043
—. See *Katagiri, Yamamoto, and Hayaishi,* PC2413
—. See *Nishizuka and Hayaishi,* 2721
—. See *Nishizuka, Ichiyama, Nakamura, and Hayaishi,* PC268
Heath, Edward C., and **Mohammad Ali Ghalambor.** The Metabolism of L-Fucose. I. The Purification and Properties of L-Fuculose Kinase, 2423
—. See *Ghalambor and Heath,* 2427
Hechter, Oscar. See *Carlin and Hechter,* PC1371
Hegre, Carman S. See *Halenz, Feng, Hegre, and Lane.* 2140
Hegsted, D. Mark. See *Reddy and Hegsted,* 705
Hehre, Edward J. See *Sawai and Hehre,* 2047
Heimberg, Murray, Ira Weinstein, Guinn Dishmon, and **Allen Dunkerley.** The Action of Carbon Tetrachloride on the Transport and Metabolism of Triglycerides and Fatty Acids by the Isolated Perfused Rat Liver and Its Relationship to the Etiology of Fatty Liver, 3623
Heinstein, P. F., F. H. Smith, and **S. B. Tove.** Biosynthesis of C^{14}-labeled Gossypol, 2643
Helinski, Donald R. See *Henning, Helinski, Chao, and Yanofsky,* 523
Hellerman, Leslie, Oscar K. Reiss, and **M. L. Gey.** Pyruvate Metabolism. IV. Utilization of Pyruvate in the Isolated Mitochondria of an Ascitic Form of Walker Rat Mammary Carcinoma 256, 997
—. See *Deitrich, Hellerman, and Wein,* 560
—. See *Neims and Hellerman,* PC976

Hellerman, Leslie. See *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber,* 992

Hellman, Leon. See *Fishman, Brown, Hellman, Zumoff, and Gallagher,* 1489

—. See *Fukushima, Bradlow, Hellman, and Gallagher,* 3359

Hellström, Kjell. See *Danielsson, Eneroth, Hellström, and Sjövall,* 3657

Helmreich, Ernst, Milton Kern, and **Herman N. Eisen.** Observations on the Mechanism of Secretion of γ-Globulins by Isolated Lymph Node Cells, 1925

—, and **David M. Kipnis.** Amino Acid Transport in Lymph Node Cells, 2582

Henderson, J. Frank. Feedback Inhibition of Purine Biosynthesis in Ascites Tumor Cells, 2631

Henderson, L. M. See *Smith, Newman, Leach, and Henderson,* 1194

—. See *Tsung, Smith, Leach, and Henderson,* 1194

Hendrickson, Elizabeth M. See *Kirkman and Hendrickson,* 2371

Henning, U., Donald R. Helinski, F. C. Chao, and **Charles Yanofsky.** The A Protein of the Tryptophan Synthetase of *Escherichia coli.* Purification, Crystallization, and Composition Studies, 1523

Heppel, Leon A., D. R. Harkness, and **R. J. Hilmoe.** A Study of the Substrate Specificity and Other Properties of the Alkaline Phosphatase of *Escherichia coli,* 841

Herring, Betty. See *Pastan, Herring, Johnson, and Field,* 287

Herskovits, Theodore T., and **Michael Laskowski, Jr.** Location of Chromophoric Residues in Proteins by Solvent Perturbation. I. Tyrosyls in Serum Albumins, 2481

—, and —. Location of Chromophoric Residues in Proteins by Solvent Perturbation. II. Tyrosyls in Ovomucoid, 3418

Hertting, Georg, and **Elwood H. Labrosse.** Biliary and Urinary Excretion of Metabolites of 7-H^3-Epinephrine in the Rat, 2291

Hill, Robert J., and **William Konigsberg.** The Structure of Human Hemoglobin. IV. The Chymotryptic Digestion of the α Chain of Human Hemoglobin, 3151

—, —, **Guido Guidotti,** and **Lyman C. Craig.** The Structure of Human Hemoglobin. I. The Separation of the α and β Chains and their Amino Acid Composition, 1549

—. See *Guidotti, Hill, and Konigsberg,* 2184

—. See *Konigsberg and Hill,* 2457, 3157

Hill, Robert L., and **William R. Schmidt.** The Complete Enzymic Hydrolysis of Proteins, 389

—. See *Margoliash, Kimmel, Hill, and Schmidt,* 2148

—. See *Perkoff, Hill, Brown, and Tyler,* 2820

—. See *Swenson, Hill, Lehmann, and Jim,* 1517

Hilmoe, R. J. See *Heppel, Harkness, and Hilmoe,* 841

Himes, Richard H., and **Jesse C. Rabinowitz.** Formyltetrahydrofolate Synthetase. II. Characteristics of the Enzyme and the Enzymic Reaction, 2903

—, and —. Formyltetrahydrofolate Synthetase. III. Studies on the Mechanism of the Reaction, 2915

Hoffmann, Rita C. See *Kohn, Winzler, and Hoffmann,* 304

Hofmann, T. See *Massey, Hofmann, and Palmer,* 3820

Hogenkamp, H. P. C., J. N. Ladd, and **H. A. Barker.** The Identification of a Nucleoside Derived from Coenzyme B_{12}, 1950

Hokin, Lowell E. See *Pieringer and Hokin,* 653, 659

Holcomb, D. N. See *Sophianopoulos, Rhodes, Holcomb, and Van Holde,* 1107

Holley, Robert W. See *Apgar, Holley, and Merrill,* 796

Holliday, T. A. See *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday,* 2678

Holmes, Leila B. See *Deiss, Holmes, and Johnston,* 3555

Hope, Derek B., V. V. S. Murti, and **Vincent du Vigneaud.** A Highly Potent Analogue of Oxytocin, Desamino-oxytocin, 1563

—, and **Vincent du Vigneaud.** Synthesis of Desamino-desoxy-oxytocin, a Biologically Active Analogue of Oxytocin, 3146

Hopper, Sarah, and **Harold L. Segal.** Kinetic Studies of Rat Liver Glutamic-Alanine Transaminase, 3189

—. See *Segal, Beattie, and Hopper,* 1914

—. See *Segal, Rosso, Hopper, and Weber,* PC3303

Horecker, B. L. See *Avigad, Amaral, Asensio and Horecker,* 2736

—. See *Chakravorty, Veiga, Bacila, and Horecker,* 1014

Horowitz, N. H. See *Ohnishi, Macleod, and Horowitz,* 138

Horwitz, Susan B. See *Liss, Horwitz, and Kaplan,* 1342

Hoskins, Dale D., H. R. Whiteley, and **Bruce Mackler.** The Reduced Diphosphopyridine Nucleotide Oxidase of *Streptococcus faecalis*: Purification and Properties, 2647

Hosokawa, Keiichi. See *Ichihara, Adachi, Hosokawa, and Takeda,* 2296

Howard, Robert L. See *King and Howard,* 1686

—. See *King, Howard, Wilson, and Li,* 2941

Howes, William V. See *McFadden and Howes,* 1410

Huang, Shu Chin. See *Kosow, Huang, and Lane,* 3633

Huang, Wei Y., and **William H. Pearlman.** The Corpus Luteum and Steroid Hormone Formation. I. Studies on Luteinized Rat Ovarian Tissue *in Vitro,* 1060

Huennekens, F. M. See *Mackler, Collipp, Duncan, Rao, and Huennekins,* 2968

—. See *Whiteley and Huennekens,* 1290

Hughes, R. C., Adel A. Yunis, Edwin G. Krebs, and **Edmond H. Fischer.** Comparative Studies on Glycogen Phosphorylase. III. The Phosphorylated Site in Human Muscle Phosphorylase *a,* 40

Hughes, Thomas R., Jr. See *Cohn and Hughes,* 176

Hultquist, D. E. See *Boyer, DeLuca, Ebner, Hultquist, and Peter,* PC3306

Hummel, J. P. See *Nelson and Hummel,* 1567

—. See *Nelson, Hummel, Swenson, and Friedman,* 1575

Humphreys, Jean S. See *Ravel, Norton, Humphreys, and Shive,* 2845

Hurwitz, Jerard, J. J. Furth, Monika Anders, and **Audry Evans.** The Role of Deoxyribonucleic Acid in Ribonucleic Acid Synthesis. II. The Influence of Deoxyribonucleic Acid on the Reaction, 3752

—. See *August, Ortiz, and Hurwitz,* 3786

—. See *Furth, Hurwitz, and Anders,* 2611

—. See *Kahan and Hurwitz,* 3778

I

Iber, Anne E. See *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber*, 992

Ichihara, Akira, Kozaburo Adachi, Keiichi Hosokawa, and **Yoshiro Takeda.** The Enzymatic Hydroxylation of Aromatic Carboxylic Acids; Substrate Specificities of Anthranilate and Benzoate Oxidases, 2296

Ichiyama, Arata. See *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi*, PC2043

—. See *Nishizuka, Ichiyama, Nakamura, and Hayaishi*, PC268

Imada, Miles R. See *Werbin, Chaikoff, and Imada*, 2072

Imahori, Kazutomo. See *Fujioka and Imahori*, 2804

Imamura, Kiichi. See *Tonomura, Sekiya, and Imamura*, 3110

Imsande, John, and **Arthur B. Pardee.** Regulation of Pyridine Nucleotide Biosynthesis in *Escherichia coli*, 1305

Ingraham, Lloyd L. See *Mazelis and Ingraham*, 109

Irreverre, Filadelfo. See *Morris, Thompson, Asen, and Irreverre*, 2180

Ishikawa, Shinji, and **Albert L. Lehninger.** Reconstitution of Oxidative Phosphorylation in Preparations from *Micrococcus lysodeikticus*, 2401

Isselbacher, Kurt J., Marilyn F. Chrabas, and **Rita C. Quinn.** The Solubilization and Partial Purification of a Glucuronyl Transferase from Rabbit Liver Microsomes, 3033

—. See *Senior and Isselbacher*, 1454

Ito, Eiji, and **Jack L. Strominger.** Enzymatic Synthesis of the Peptide in Bacterial Uridine Nucleotides. I. Enzymatic Addition of L-Alanine, D-Glutamic Acid, and L-Lysine, 2689

—, and —. Enzymatic Synthesis of the Peptide in Bacterial Uridine Nucleotides. II. Enzymatic Synthesis and Addition of D-Alanyl-D-alanine, 2696

Ives, David H., and **Cyrus P. Barnum.** Radiochemical Equilibration of Phosphorus-containing Precursors of Deoxyribonucleic Acid in Regenerating Rat Liver, 2599

Iyer, N. T. See *Drummond, Iyer, and Keith*, 3535

J

Jackson, C. P. See *Ramamurti and Jackson*, 2434

Jacobsohn, Gert M., and **Seymour Lieberman.** Studies on the Chemical Cleavage of the Urinary Glucuronosides of the 17-Ketosteroids, 1469

Jacobson, Bernard, and **Eugene A. Davidson.** Biosynthesis of Uronic Acids by Skin Enzymes. I. Uridine Diphosphate-D-glucose Dehydrogenase of Rabbit Skin, 635

—, and —. Biosynthesis of Uronic Acids by Skin Enzymes. II. Uridine Diphosphate-D-glucuronic Acid-5-epimerase, 638

Jacobson, Birgit. See *Hansen, Wood, Peeters, Jacobson, and Wilken*, 1034

Jacoby, G. A. See *Zannoni, Jacoby, Malawista, and La Du*, 3506

Jakoby, William B. See *Aurbach and Jakoby*, 565

Jarabak, Joseph, Julia A. Adams, H. G. Williams-Ashman, and **Paul Talalay.** Purification of a 17β-Hydroxysteroid Dehydrogenase of Human Placenta and Studies on its Transhydrogenase Function, 345

—. See *Adams, Jarabak, and Talalay*, 3069

Jeanloz, Roger W. See *Eylar and Jeanloz*, 622, 1021

Jiang, Nai-Siang, and **D. P. Groth.** Polycarboxylic Acid Activation of Rat Liver Deoxyribose Phosphate Aldolase, 3339

Jim, Robert T. S. See *Swenson, Hill, Lehmann, and Jim*, 1517

Johnson, Anne B., and **Harold J. Strecker.** The Interconversion of Glutamic Acid and Proline. IV. The Oxidation of Proline by Rat Liver Mitochondria, 1876

Johnson, B. Connor. See *Klain and Johnson*, 123

Johnson, Marvin J. See *Bloom and Johnson*, 2718

Johnson, Phyllis. See *Pastan, Herring, Johnson, and Field*, 287

Johnston, C. Conrad, Jr., William P. Deiss, Jr., and **Edward B. Miner.** Bone Matrix Biosynthesis *in Vitro*. II. Effects of Parathyroid Hormone, 3560

—. See *Diess, Holmes, and Johnston*, 3555

Johnston, Clare C., and **Merle Mason.** Tryptophan Metabolism: Formation of β-(-Xanthurenyl)glucosiduronic Acid in the Rat and in Rat Kidney Slices, 29

Johnstone, Margery. See *Brown, Martinez, Johnstone, and Olcott*, 81

Jones, Judith C. See *Christensen and Jones*, 1203

Jorgensen, Eugene C., Peter A. Lehman, Cyrus Greenberg, and **Nicolas Zenker.** Thyroxine Analogues. VII Antigoitrogenic, Calorigenic, and Hypocholesteremic Activities of Some Aliphatic, Alicyclic, and Aromatic Ethers of 3,5-Diiodotyrosine in the Rat, 3832

Joshi, Jayant G., and **Philip Handler.** Purification and Properties of Nicotinamidase from *Torula cremoris*, 929

—, and —. Metabolism of Trigonelline, 3185

Josse, John, and **Arthur Kornberg.** Glucosylation of Deoxyribonucleic Acid. III. α- and β-Glucosyl Transferases from T4-infected *Escherichia coli*, 1968

—. See *Radding, Josse, and Kornberg*, 2869

Jourdian, George W., and **Saul Roseman.** The Sialic Acids. II. Preparation of *N*-Glycolylhexosamines, *N*-Glycolylhexosamine 6-Phosphates, Glycolyl Coenzyme A, and Glycolyl Glutathione, 2442

—. See *Brunetti, Jourdian, and Roseman*, 2447

K

Kahan, Fred M., and **Jerard Hurwitz.** The Role of Deoxyribonucleic Acid in Ribonucleic Acid Synthesis. IV. The Incorporation of Pyrimidine and Purine Analogues into Ribonucleic Acid. 3778

Kaihara, Masako, and **J. M. Price.** The Metabolism of Quinaldic Acid, Kynurenic Acid, and Xanthurenic Acid in the Rabbit, 1727

Kakimoto, Yasuo, and **Marvin D. Armstrong.** The Phenolic Amines of Human Urine, 208

—, and —. On the Identification of Octopamine in Mammals, 422

Kamen, Martin D. See Dus, Bartsch, and Kamen, 3083

Kamin, Henry. See *Williams and Kamin*, 587

Kandutsch, A. A. Enzymatic Reduction of the Δ^7 Bond of 7-Dehydrocholesterol, 358

Kaneda, Toshi, John C. Butte, Sheldon B. Taubman, and **John W. Corcoran.** Actinomycete Antibiotics. III. The Biogenesis of Erythronolide, the C_{21} Branched Chain Lactone in Erythromycin, 322

Kanfer, Julian, and **Eugene P. Kennedy.** Synthesis of Phosphatidylserine by *Escherichia coli*, PC270

Kanfer, Julian. See *Nicholls, Kanfer, and Titus,* 1043
Kaplan, Nathan O. See *Avi-Dor, Olson, Doherty, and Kaplan,* 2377
—. See *Fawcett and Kaplan,* 1709
—. See *Liss, Horwitz, and Kaplan,* 1342
Kassell, Beatrice, and **M. Laskowski, Sr.** A Comparison of the Terminal Amino Acids of Chymotrypsinogen B and α-Chymotrypsinogen, 413
Katagiri, Masayuki, Shozo Yamamoto, and **Osamu Hayaishi.** Flavin Adenine Dinucleotide Requirement for the Enzymic Hydroxylation of Salicylic Acid, PC2413
Katchalski, Ephraim. See *Cebra, Givol and Katchalski,* 751
—. See *Glazer, Bar-Eli, and Katchalski,* 1832
—. See *Sarid, Berger, and Katchalski,* 2207
Kato, George K. See *Kimmel, Kato, Paiva, and Smith,* 2525
Katz, Edward, Darwin J. Prockop, and **Sidney Udenfriend.** Precursors of the Hydroxyproline and Ketoproline in Actinomycin, 1585
—, and **Herbert Weissbach.** Biosynthesis of the Actinomycin Chromophore; Enzymatic Conversion of 4-Methyl-3-hydroxyanthranilic Acid to Actinocin, 882
Katz, Joseph, and **Jack Kornblatt.** Propionate Metabolism by Slices of Mammary Gland and Liver of Lactating Rat, 2466
Kaufman, Seymour. On the Structure of the Phenylalanine Hydroxylation Cofactor, PC2712
—. See *Bridgers and Kaufman,* 526
Kawahara, Frank S., Shu-Fang Wang, and Paul Talalay. The Preparation and Properties of Crystalline Δ^5-3-Ketosteroid Isomerase, 1500
Kawai, Hitoshi. See *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi,* PC2043
Kay, Cyril M., and **Henry F. Pabst.** Physicochemical Properties of γ-Myosin from Dystrophic Muscle, 727
—. See *Brahms and Kay,* 3449
Kaziro, Yoshito, L. F. Hass, P. D. Boyer, and **Severo Ochoa.** Mechanism of the Propionyl Carboxylase Reaction. II. Isotopic Exchange and Tracer Experiments, 1460
—. See *Mazumder, Sasakawa, Kaziro, and Ochoa,* 3065
Kearney, Edna B. See *Watari, Kearney, Singer, Basinski, Hauber, and Lusty,* PC1731
Keay, L. See *Robinson, Keay, Molinari, and Sizer,* 2001
Keil, John G. See *Bentley, Bhate, and Keil,* 859
—. See *Bentley and Keil,* 867
Keith, Jacqueline. See *Drummond, Iyer, and Keith,* 3535
Kellermeyer, R. See *Rose, Kellermeyer, Stjernholm, and Wood,* 3325
Kennedy, Eugene P. See *Kanfer and Kennedy,* PC270
Kenney, Francis T. Induction of Tyrosine-α-ketoglutarate Transaminase in Rat Liver. II. Enzyme Purification and Preparation of Antitransaminase, 1605
—. Induction of Tyrosine-α-ketoglutarate Transaminase in Rat Liver. III. Immunochemical Analysis, 1610
—. Induction of Tyrosine-α-ketoglutarate Transaminase in Rat Liver. IV. Evidence for an Increase in the Rate of Enzyme Synthesis, 3495
Keresztesy, John C. See *Donaldson and Keresztesy,* 1298, 3815
Kern, Milton. See *Helmreich, Kern, and Eisen,* 1925
Khan, Badar T. See *Caspi, Dorfman, Khan, Rosenfeld, and Schmid,* 2085
Kielley, W. Wayne. See *Sekine, Barnett, and Kielley,* 2769
Kielley, W. Wayne. See *Young, Harrington, and Kielley,* 3116
Kimberg, Daniel V., and **K. Lemone Yielding.** Pyruvate Kinase. Structural and Functional Changes Induced by Diethylstilbestrol and Certain Steroid Hormones, 3233
Kimmel, J. R., George K. Kato, Antonio C. M. Paiva, and **Emil L. Smith.** Tryptic Digest of Papain. I. Isolation and Sequence of Some Peptides from the Oxidized Protein, 2525
—. See *Margoliash, Kimmel, Hill, and Schmidt,* 2148
King, Tsoo E., and **Robert L. Howard.** The Preparation and Some Properties of a Reduced Diphosphopyridine Nucleotide Dehydrogenase from the Snake Venom Digest of a Heart Muscle Preparation, 1686
—, —, **David F. Wilson,** and **Jerome C. R. Li.** The Partition of Flavins in the Heart Muscle Preparation and Heart Mitochondria, 2941
Kipnis, David M. See **Helmreich and Kipnis,** 2582
Kirkman, Henry N. Glucose 6-Phosphate Dehydrogenase from Human Erythrocytes. I. Further Purification and Characterization, 2364
—, and **Elizabeth M. Hendrickson.** Glucose 6-Phosphate Dehydrogenase from Human Erythrocytes. II. Subactive States of the Enzyme from Normal Persons, 2371
Kirkwood, S. See *Witonsky and Kirkwood,* 2892
Kirshner, Norman. Uptake of Catecholamines by a Particulate Fraction of the Adrenal Medulla, 2311
—. See *Smith and Kirshner,* 1890
Kirtley, Mary E., Harry Rudney, and **I. F. Durr.** The Deacylation of Diastereoisomers of β-Hydroxy-β-methylglutaryl Coenzyme A by Yeast Extracts, 1781
Kitagawa, Shotaro. See *Tonomura, Kitagawa, and Yoshimura,* 3660
Kitz, R., and Irwin B. Wilson. Esters of Methanesulfonic Acid as Irreversible Inhibitors of Acetylcholinesterase, 3245
Klain, George, and **B. Connor Johnson.** Metabolism of Labeled Aminoethanol, Glycine, and Arginine in the Chick, 123
Klainer, L. M., Y.-M. Chi, S. L. Freidberg, T. W. Rall, and **Earl W. Sutherland.** Adenyl Cyclase. IV. The Effects of Neurohormones on the Formation of Adenosine 3′,5′-Phosphate by Preparations from Brain and Other Tissues, 1239
Kleppe, Kjell. See *Pazur and Kleppe,* 1002
Klouwen, Herman. See *Fleischer, Brierley, Klouwen, and Slautterback,* 3264
Knox, W. Eugene. See *Goldstein, Knox, and Behrman,* 2855
—. See *Goldstein, Stella, and Knox,* 1723
Koeppe, Roger E., and **Chae Hee Hahn.** Concerning Pyrvate Metabolism in Rat Brain, 1026
Kohn, Paul, Richard J. Winzler, and **Rita C. Hoffmann.** Metabolism of D-Glucosamine and *N*-Acetyl-D-glucosamine in the Intact Rat, 304
Konigsberg, William, and **Robert J. Hill.** The Structure of Human Hemoglobin. III. The Sequence of Amino Acids in the Tryptic Peptides of the α Chain, 2547
—, and —. The Structure of Human Hemoglobin. V. The Digestion of the α Chain of Human Hemoglobin with Pepsin, 3157

Konigsberg, William. See *Guidotti, Hill, and Konigsberg,* 2184
—. See *Hill and Konigsberg,* 3151
—. See *Hill, Konigsberg, Guidotti, and Craig,* 1549
Korn, David. See *Weissbach and Korn,* PC3312
Korn, Edward D. The Kinetics of the Inhibition of Lipoprotein Lipase by Polyanions and Polycations, 3423
Kornberg, Arthur. See *Aposhian and Kornberg,* 510
—. See *Josse and Kornberg,* 1968
—. See *Radding and Kornberg,* 2877
—. See *Radding, Josse, and Kornberg,* 2869
—. See *Swartz, Trautner, and Kornberg,* 1961
—. See *Zimmerman, Kornberg, and Kornberg,* 512
Kornblatt, Jack. See *Katz and Kornblatt,* 2466
Kornfeld, Rosalind, and **David H. Brown.** Preparation and Properties of Uridine Diphosphate Glucose-Glycogen Transglucosylase, 1772
Kornfeld, Stuart, and **Luis Glaser.** The Synthesis of Thymidine-linked Sugars. V. Thymidine Diphosphate-Amino Sugars, 3052
Koshland, D. E., Jr. See *Levy, Ryan, Springhorn, and Koshland,* PC1730
—. See *Ray and Koshland,* 2493
Kosow, David P., Shu Chin Huang, and **M. Daniel Lane.** Propionyl Holocarboxylase Synthesis. I. Preparation and Properties of the Enzyme System, 3633
Kosuge, T., and **Eric E. Conn.** The Metabolism of Aromatic Compounds in Higher Plants. V. Purification and Properties of Dihydrocoumarin Hydrolase of *Melilotus alba,* 1653
Koszalka, Thomas R. See *Gerber, Gerber, Koszalka, and Miller,* 2246
Koukol, Jane, P. Miljanich, and **Eric E. Conn.** The Metabolism of Aromatic Compounds in Higher Plants. VI. Studies on the Biosynthesis of Dhurrin, the Cyanogenic Glucoside of *Sorghum vulgare,* 3223
Kowalsky, Arthur. Nuclear Magnetic Resonance Studies of Proteins, 1807
Kozloff, Lloyd M. See *Wahl and Kozloff,* 1953
Krackov, Julia K. See *Wang and Krackov,* 3614
Krane, Stephen M., and **Melvin J. Glimcher.** Transphosphorylation from Nucleoside Di- and Triphosphates by Apatite Crystals, 2991
Krasna, Alvin I. The Stereochemical Configuration of DL-β-Fluoromalic Acid, 1418
Krebs, Edwin G. See *Hughes, Yunis, Krebs, and Fischer,* 40
—. See *Vanderheiden, Meinhart, Dodson, and Krebs,* 2095
—. See *Yunis and Krebs,* 34
—. See *Yunis, Fischer, and Krebs,* 2809
Krech, David. See *Bennett, Drori, Krech, Rosenzweig, and Abraham,* 1758
Krishnaswamy, P. R., Vaira Pamiljans, and **Alton Meister.** Studies on the Mechanism of Glutamine Synthesis: Evidence for the Formation of Enzyme-bound Activated Glutamic Acid, 2932
Krogmann, D. W. See *Black, Turner, Gibbs, Krogmann, and Gordon,* 580
Krogmann, David W., and **Edwin Olivero.** The Specificity of Plastoquinone as a Cofactor for Photophosphorylation, 3292
Krueger, R. C. See *Smith and Krueger,* 1121
Kuby, Stephen A. See *Mahowald, Noltmann, and Kuby,* 1138, 1535
—. See *Noltmann, Mahowald, and Kuby,* 1146
Kulka, Richard G., and **Cecil Cooper.** The Action of Oligomycin on the Inorganic Orthophosphate-Adenosine Triphosphate and Adenosine Diphosphate-Adenosine Triphosphate Exchange Reactions of Digitonin Particles, 936
Kun, E. See *Fanshier, Gottwald, and Kun,* 3588
Kuno, Sigeru, and **I. R. Lehman.** Gentiobiose, a Constituent of Deoxyribonucleic Acid from Coliphage T6, 1266
Kupke, Donald, W. Correlation of a Soluble Leaf Protein with Chlorophyll Accumulation, 3287

L

LaBrosse, Elwood H. See *Hertting and LaBrosse,* 2291
Ladd, J. N. See *Hogenkamp, Ladd, and Barker,* 1950
La Du, Bert N. See *Zannoni, Jacoby, Malawista, and La Du,* 3506
LaMantia, L. See *Alivisatos, LaMantia, Ungar, and Matijevitch,* 1212
Lane, M. Daniel. See *Halenz, Feng, Hegre, and Lane,* 2140
—. See *Kosow, Huang, and Lane,* 3633
Langdon, Robert G. See *Mize and Langdon,* 1589
—. See *Mize, Thompson, and Langdon,* 1596
—. See *Phillips and Langdon,* 2652
Lange, Rolf. See *Pihl and Lange,* 1356
Langholtz, Esther. See *Danishefsky, Eiber, and Langholtz,* 1413
Lansford, Edwin M., Jr. See *Conway, Lansford, and Shive,* 2850
Larsen, J. L. See *Volk and Larsen,* 2454
Laskowski, M., Sr. See *Georgatsos, Unterholzner, and Laskowski,* 2626
—. See *Kassell and Laskowski,* 413
—. See *Sulkowski and Laskowski,* 2620
—. See *Sung and Laskowski,* 506
Laskowski, Michael, Jr. See *Herskovits and Laskowski,* 2481, 3418
Lavate, W. V., J. R. Dyer, C. M. Springer, and **Ronald Bentley.** A New, Naturally Occurring Member of the Coenzyme Q Group: Tetrahydrocoenzyme Q_{10}, PC2715
Lax, Sandra R. See *Smith, Ravel, Lax, and Shive,* 3566
Leach, Franklin R. See *Smith, Newman, Leach, and Henderson,* 1194
—. See *Tsung, Smith, Leach, and Henderson,* 1194
Leboeuf, Bernard, Albert E. Renold, and George F. Cahill, Jr. Studies on Rat Adipose Tissue *in Vitro.* IX. Further Effects of Cortisol on Glucose Metabolism, 988
Lehman, I. R., G. G. Roussos, and **E. A. Pratt.** The Deoxyribonucleases of *Escherichia coli.* II. Purification and Properties of a Ribonucleic Acid-inhibitable Endonuclease, 819
—, —, and —. The Deoxyribonucleases of *Escherichia coli.* III. Studies on the Nature of the Inhibition of Endonuclease by Ribonucleic Acid, 829
—. See *Kuno and Lehman,* 1266
Lehman, Peter A. See *Jorgensen, Lehman, Greenberg, and Zenker,* 3832
Lehmann, Hermann. See *Swenson, Hill, Lehmann, and Jim,* 1517
Lehninger, Albert L. A Heat-labile Factor Required in Extrusion of Water from Mitochondria, 946
—. See *Ishikawa and Lehninger,* 2401
—. See *Neubert and Lehninger,* 952
—. See *Neubert, Rose, and Lehninger,* 2025
—. See *Wise and Lehninger,* 1363

Leibmann, Kenneth C., and **Susan K. Fellner.** Some Aspects of Serine Metabolism: Actions of Isoserine and Other Inhibitors, 2213
Lennarz, W. J., Günter Scheuerbrandt, and **Konrad Bloch.** The Biosynthesis of Oleic and 10-Methylstearic Acids in *Mycobacterium phlei*, 664
—. See *Light, Lennarz, and Bloch*, 1793
Levenberg, Bruce. Role of L-Glutamine as Donor of Carbamyl Nitrogen for the Enzymatic Synthesis of Citrulline in *Agaricus bisporus*, 2590
Levine, Elliot M., and **Sofia Simmonds.** Further Studies on Metabolite Uptake by Serine-Glycine Auxotrophs of *Escherichia coli*, 3718
Levy, Harvey M., Elizabeth M. Ryan, Sylvia S. Springhorn, and **D. E. Koshland, Jr.** Further Evidence for Oxygen Exchange at an Intermediate Stage in Myosin Hydrolysis, PC1730
Lewis, J. C. See *Finkle, Lewis, Corse, and Lundin*, 2926
Lewis, U. J. Enzymatic Transformations of Growth Hormone and Prolactin, 3141
Li, Jerome C. R. See *King, Howard, Wilson, and Li*, 2941
Liao, Shutsung, John T. Dulaney, and **H. G. Williams-Ashman.** Purification and Properties of a Flavoprotein Catalyzing the Oxidation of Reduced Ribosyl Nicotinamide, 2981
Lieberman, Irving, and **Peter Ove.** Deoxyribonucleic Acid Synthesis and its Inhibition in Mammalian Cells Cultured from the Animal, 1634
Lieberman, Seymour. See *Jacobsohn and Lieberman*, 1469
Light, Albert. The Carboxyl-terminal Sequence of Papain, 2535
—, and **Emil L. Smith.** Chymotryptic Digest of Papain. IV. Peptides from the Oxidized, Carboxymethylated, and Denatured Protein, 2537
Light, R. J., W. J. Lennarz, and **Konrad Bloch.** The Metabolism of Hydroxystearic Acids in Yeast, 1793
Lindskog, Sven, and **Bo G. Malmström.** Metal Binding and Catalytic Activity in Bovine Carbonic Anhydrase, 1129
Lippoldt, R. E. See *Edelhoch and Lippoldt*, 2788
Liss, Maurice, Susan B. Horwitz, and **Nathan O. Kaplan.** D-Mannitol 1-Phosphate Dehydrogenase in *Aerobacter aerogenes*, 1342
Litwack, Gerald, and **Thomas I. Diamondstone.** Nonspecific Stimulation of Tyrosine-α-ketoglutarate Transaminase Activity *in Vivo*, 469
Lively, Edmund P. See *Tanford, Buckley, De, and Lively*, 1168
Llorente Rodriquez, Pilar. See *Morreale de Escobar, Escobar del Rey, and Llorente Rodriquez*, PC2041
Loercher, Richard. See *Mandelstam, Loercher, and Strominger*, 2683
Logan, Milan A. See *Ogle, Arlinghaus, and Logan*, 3667
Logue, A. D. See *Richards and Logue*, 3693
London, Irving M. See *Lowy, Williams, and London*, 1622
Longmore, William J., and **Dwight J. Mulford.** The Effect of 2-Amino-2-methylpropanol on Rat Liver Phospholipid Metabolism, 694
Lornitzo, Frank A. See *Goldman and Lornitzo*, 3332
Lovenberg, W., Herbert Weissbach, and **Sidney Udenfriend.** Aromatic L-Amino Acid Decarboxylase, 89
Lowenstein, John M. See *Spencer and Lowenstein*, 3640
Lowy, Bertram A., Marjorie K. Williams, and **Irving M. London.** Enzymatic Deficiencies of Purine Nucleotide Synthesis in the Human Erythrocyte, 1622
Löw, Hans. See *Greenawalt, Weibull, and Löw*, 853
—. See *Weibull, Greenawalt, and Löw*, 847
Lum, Susan C. See *Hammen and Lum*, 2419
Lundin, R. E. See *Finkle, Lewis, Corse, and Lundin*, 2926
Lustgarten, J. See *Margoliash and Lustgarten*, 3397
Lusty, C. J. See *Watari, Kearney, Singer, Basinski, Hauber, and Lusty*, PC1731
Lynn, Lydia T. See *Putnam, Tan, Lynn, Easley, and Migita*, 717
Lyon, John B., Jr., James A. Bain, and **Harry L. Williams.** The Distribution of Vitamin B_6 in the Tissues of Two Inbred Strains of Mice Fed Complete and Vitamin B_6-deficient Rations, 1989

M

MacDonald, James C. Biosynthesis of Hydroxyaspergillic Acid, 1977
MacGregor, J., and **B. E. C. Nordin.** Equilibration Studies with Human Bone Powder. II. The Role of the Carbonate Ion, 2704
Mackenzie, Cosmo G. See *Frisell and Mackenzie*, 94
—. See *Frisell, Cronin, and Mackenzie*, 2975
Mackler, Bruce, P. J. Collipp, Helen M. Duncan, N. Appaji Rao, and **F. M. Huennekens.** An Electron Transport Particle from Yeast: Purification and Properties, 2968
—. See *Hoskins, Whiteley, and Mackler*, 2467
Macleod, Helen. See *Ohnishi, Macleod, and Horowitz*, 138
Madoff, Morton A. See *Eylar, Madoff, Brody, and Oncley*, 1992
Magasanik, Boris. See *Shedlovsky and Magasanik*, 3725, 3731
Mahowald, Theodore A., Ernst A. Noltmann, and **Stephen A. Kuby.** Studies on Adenosine Triphosphate Transphosphorylases. I. Amino Acid Composition of Adenosine Triphosphate-Adenosine 5′-Phosphate Transphosphorylase (Myokinase), 1138
—, —, and —. Studies on Adenosine Triphosphate Transphosphorylases. III. Inhibition Reactions, 1535
—. See *Noltmann, Mahowald, and Kuby*, 1146
Maitra, Umadas. See *Dekker and Maitra*, 2218
Malawista, S. E. See *Zannoni, Jacoby, Malawista, and La Du*, 3506
Maley, Frank. See *Maley and Maley*, PC3311
—. See *McGarrahan and Maley*, 2458
Maley, Gladys F., and **Frank Maley.** Nucleotide Interconversions. IX. The Regulatory Influence of Deoxycytidine 5′-Triphosphate and Deoxythymidine 5′-Triphosphate on Deoxycytidylate Deaminase, PC3311
Malmström, Bo G. See *Lindskog and Malmström*, 1129
Mandeles, Stanley, and **Eufemio D. Ducay.** Site of Egg White Protein Formation, 3196
Mandelstam, Paul, Richard Loercher, and **Jack L. Strominger.** A Uridine Diphosphocetylmuramyl Hexapeptide from Penicillin-treated *Streptococcus faecalis*, 2683
Mangiarotti, G. See *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti*, 3597
—. See *Pontremoli and Mangiarotti*, 643
Mangiarotti, M. See *Bonsignore, Pon-*

tremoli, Mangiarotti, De Flora, and Mangiarotti, 3597
Mansour, Joan M. See *Mansour and Mansour,* 629
Mansour, Tag E., and **Joan M. Mansour.** Effects of Serotonin (5-Hydroxytryptamine) and Adenosine 3′,5′-Phosphate on Phosphofructokinase from the Liver Fluke, *Fasciola hepatica,* 629
Mao, Rose L. See *Falcone, Mao, and Shrago,* 904
Marcus, Abraham, and **John Feeley.** Inhibition of Catalase by Reducing Agents in the Presence of Phenazine Methosulfate, 221
—, and **Leland M. Shannon.** γ-Methyl-γ-hydroxy-α-ketoglutaric Aldolase. II. Studies with Pyruvate-C^{14}, 3348
—. See *Shannon and Marcus,* 3342
Mardones, J. See *Segovia-Riquelme, Campos, Solodkowska, Gonzalez, Alvardo, and Mardones,* 2038
Margoliash, E. Amino Acid Sequence of Chymotryptic Peptides from Horse Heart Cytochrome *c,* 2161
—, **J. R. Kimmel, Robert L. Hill,** and **William R. Schmidt.** Amino Acid Composition of Horse Heart Cytochrome *c,* 2148
—, and **J. Lustgarten.** Interconversion of Horse Heart Cytochrome *c* Monomer and Polymers, 3397
—, and **A. Schejter.** Kinetics of the Irreversible Inhibition of Catalase by 3-Amino-1,2,4-triazole in the Presence of Hydrogen Peroxide and Catalase-Hydrogen Peroxide Complex I Hydrogen Donors, 2359
—, and **Emil L. Smith.** Isolation and Amino Acid Composition of Chymotryptic Peptides from Horse Heart Cytochrome *c,* 2151
Margolis, Simeon, and **Martha Vaughan.** α-Glycerophosphate Synthesis and Breakdown in Homogenates of Adipose Tissue, 44
Mariz, Ida Kozak. See *Daughaday and Mariz,* 2831
Markovitz, Alvin. Isolation of a D-Talomethylose (6-Deoxy-D-talose) and D-Rhamnose (6-Deoxy-D-mannose) from Capsular Polysaccharide of a Gram-negative Bacterium, 1767
—, and **Albert Dorfman.** Synthesis of Capsular Polysaccharide (Hyaluronic Acid) by Protoplast Membrane Preparations of Group A Streptococcus, 273
Marks, Paul A. See *Tsutsui, Marks, and Reich,* 3009
Marsh, John M. See *Mason, Marsh, and Savard,* 1801
Martin, Charles J. Inhibition of Trypsin, Chymotrypsin, and Plasmin by an Inhibitor Isolated from Sheep Serum, 2099
Martin, Donald B., and **P. Roy Vagelos.** The Mechanism of Tricarboxylic Acid Cycle Regulation of Fatty Acid Synthesis, 1787
Martinez, Marino. See *Brown, Martinez, Johnstone, and Olcott,* 81
Martonosi, A. Studies on Actin. VII. Ultracentrifugal Analysis of Partially Polymerized Actin Solutions, 2795
Maruyama, K., and **J. Gergely.** Interaction of Actomysin with Adenosine Triphosphate at Low Ionic Strength. I. Dissociation of Actomysin during the Clear Phase, 1095
—, and —. Interaction of Actinomysin with Adenosine Triphosphate at Low Ionic Strength. II. Factors Influencing Clearing and Superprecipitation: Adenosine Triphosphatase and Birefringence of Flow Studies, 1100
Maruyama, Koscak, and **Shizuo Watanabe.** The Role of Magnesium in the Superprecipitation of Myosin B, 3437
Mase, Ryo. See *Yagi and Mase,* 397
Mason, H. S. See *Hashimoto, Yamano, and Mason,* PC3843
Mason, Merle. See *Johnston and Mason,* 29
—. See *Schirch and Mason,* 2578
Mason, Norman R., John M. Marsh, and **Kenneth Savard.** An Action of Gonadotropin *in Vitro,* 1801
Massey, V., T. Hofmann, and **Graham Palmer.** The Relation of Function and Structure in Lipoyl Dehydrogenase, 3820
Massey, Vincent, and **N. M. Atherton.** On the Reaction between Dihydrolipoic Acid and Flavins: Spectral Changes Induced by Flavin-Peroxide Interaction, 2965
—, and **Graham Palmer.** Change Transfer Complexes of Lipoyl Dehydrogenase and Free Flavins, 2347
Mathews, F. S. See *Green, Mathews, and Rich,* PC3573
Matijevitch, B. L. See *Alivisatos, LaMantia, Ungar, and Matijevitch,* 1212
Matsubara, Hiroshi, and **Emil L. Smith.** The Amino Acid Sequence of Human Heart Cytochrome *c,* PC3575
Mattock, G. See *Semple, Mattock, and Uncles,* 963
Mattoon, James R., and **Roger D. Haight.** Glutaric Acid Accumulation by a Lysine-requiring Yeast Mutant, 3486
Mattson, F. H., and **R. A. Volpenhein.** Rearrangement of Glyceride Fatty Acids during Digestion and Absorption, 53
Maver, Mary E., and **Antoinette E. Greco.** The Chromatographic Separation and Characterization of the Acid and Alkaline Ribonucleases of Bovine Spleen and Liver, 736
Maxfield, Myles, and **David Stefanye.** The Amino Acid Composition of Normal Human Urinary Mucoprotein, 2522
Maxwell, Elizabeth S. A Study of the Mechanism by Which Steroid Hormones Influence Rabbit Liver Aldehyde Dehydrogenase, 1699
Mazelis, Mendel. The Pyridoxal Phosphate-dependent Oxidative Decarboxylation of Methionine by Peroxidase. I. Characteristics and Properties of the Reaction, 104
—, and **Lloyd L. Ingraham.** The Pyridoxal Phosphate-dependent Oxidative Decarboxylation of Methionine by Peroxidase. II. Identification of 3-Methylthiopropionamide as a Product of the Reaction, 109
Mazumder, Rajarshi, Taiji Sasakawa, Yoshito Kaziro, and **Severo Ochoa.** Metabolism of Propionic Acid in Animal Tissues. IX. Methylmalonyl Coenzyme A Racemase, 3065
Mazur, Robert H., Bernice W. Ellis, and **Peter S. Cammarata.** A New Reagent for Detection of Peptides, Nucleotides, and Other N—H-containing Compounds on Paper Chromatograms, 1619
McCaman, Richard E. Intermediary Metabolism of Phospholipids in Brain Tissue. Microdetermination of Choline Phosphokinase, 672
McCormick, Donald B. The Intracellular Localization, Partial Purification, and Properties of Flavokinase from Rat Liver, 959
McCully, Kilmer S., and **G. L. Cantoni.** Studies on Soluble Ribonucleic Acid of Rabbit Liver. VI. Frequencies of Base Sequences Revealed by Specific Enzymatic Hydrolysis, 3760

McDougall, Barbara M. See *Blakley and McDougall,* 812

McFadden, Bruce A. and **William V. Howes.** Isocitrate Lyase and Malate Synthase in *Hydrogenomonas facilis,* 1401

McGarrahan, John F., and **Frank Maley.** Hexosamine Metabolism. I. The Metabolism *in Vivo* and *in Vitro* of D-Glucosamine-1-C^{14} and *N*-Acetyl-D-glucosamine-1-C^{14} in Rat Liver, 2458

McGraw, James C. See *Scott and McGraw,* 249

McGuinness, E. T., and **W. W. Wainio.** Cytochrome *c* Oxidase. I. Nature of the Inhibition by Cytochrome *c,* 3273

McKay, R. B. See *Giles and McKay,* 3388

McKennis, Herbert, Jr., Lennox B. Turnbull, Sorell L. Schwartz, Einosuke Tamaki and **Edward R. Bowman.** Demethylation in the Metabolism of (−)-Nicotine, 541

McKenzie, J. M. Fractionation of Plasma Containing the Long Acting Thyroid Stimulator, PC3571

McManus, I. Rosabelle. Enzymatic Synthesis of Anserine in Skeletal Muscle by *N*-Methylation of Carnosine, 1207

McManus, T. T. See *Mudd and McManus,* 2057

McNamara, Peter. See *Abrams and McNamara,* 170

Meinhart, Josephine O. See *Vanderheiden, Meinhart, Dodson, and Krebs,* 2095

Meister, Alton. See *Krishnaswamy, Pamiljans, and Meister,* 2932

—. See *Srinivasan, Corrigan, and Meister,* PC3844

Melville, Donald B. See *Askari and Melville,* 1615

Mendicino, Joseph. Phosphorylation of Cytidine Monophosphate in Animal Tissues, 165

—, and **Merton F. Utter.** Interaction of Soluble and Mitochondrial Multienzyme Systems in Hexose Phosphate Synthesis, 1716

Menon, Tara. See *Sutherland, Rall, and Menon,* 1220

Merrill, Susan H. See *Apgar, Holley, and Merrill,* 796

Metzler, David E. See *Davis and Metzler,* 1883

Michelson, A. M. See *Okazaki, Okazaki, Strominger, and Michelson,* 3014

Migita, Shunsuke. See *Putnam, Tan, Lynn, Easley, and Migita,* 717

Miles, J. L., E. Morey, F. Crain, S. Gross, J. San Julian, and **W. J. Canady.** Inhibition of α-Chymotrypsin by Diethyl Ether and Certain Alcohols: a New Type of Competitive Inhibition, 1319

Miljanich, P. See *Koukol, Miljanich, and Conn,* 3223

Millar, David B. S. Physico-chemical Properties of Lactic Dehydrogenase, 2135

—. See *Schwert, Millar, and Takenaka,* 2131

Miller, Leon L. See *Gerber, Gerber, Koszalka, and Miller,* 2246

Miller, Richard W., and **John M. Buchanan.** Biosynthesis of the Purines. XXVII. *N*-(5-Amino-1-ribosyl-4-imidazolylcarbonyl)-L-aspartic Acid 5′-Phosphate Kinosynthetase, 485

—, and —. Biosynthesis of the Purines. XXVIII. Mechanism of Action of Adenylosuccinase, 491

Miller, Zelma, Inna Poncet, and **Eva Takacs.** Biochemical Studies on Experimental Congenital Malformations: Flavin Nucleotides and Folic Acid in Fetuses and Livers from Normal and Riboflavin-deficient Rats, 968

Minakami, Shigeki, Robert L. Ringler, and **Thomas P. Singer.** Studies on the Respiratory Chain-linked Dihydrodiphosphopyridine Nucleotide Dehydrogenase. I. Assay of the Enzyme in Particulate and in Soluble Preparations, 569

Minard, Frederick N., and **Raymond V. Davis.** The Effects of Electroshock on the Acid-soluble Phosphates of Rat Brain, 1283

Miner, Edward B. See *Johnston, Deiss, and Miner,* 3562

Mitoma, Chozo. See *Smith and Mitoma,* 1177

Mize, Charles E., and **Robert G. Langdon.** Hepatic Glutathione Reductase. I. Purification and General Kinetic Properties, 1589

—, **Thomas E. Thompson,** and **Robert G. Langdon.** Hepatic Glutathione Reductase. II. Physical Properties and Mechanism of Action, 1596

Molinari, Rubens. See *Robinson, Keay, Molinari, and Sizer,* 2001

Monod, Jacques. See *Zabin, Kepes, and Monod,* 253

Moore, Stanford. See *Smyth, Stein, and Moore,* 1845

Mora, Peter T. Relative Importance of Electrostatic Forces in the Interaction of Ribonuclease and Ribonucleic Acid, 3210

—, and **Bobby G. Young.** Reversible Blocking of T2 Bacteriophage Antiserum with Polyelectrolytes, 1870

—, —, and **Saiyid Rizvi.** Inactivation of Bacteriophage with Polyanions, and the Role of Amines in Activity, 157

Morell, Anatol G., Philip Aisen, and **I. Herbert Scheinberg.** Is Ceruloplasmin an Ascorbic Acid Oxidase?, 3455

Morey, E. See *Miles, Morey, Crain, Gross, San Julian, and Canady,* 1319

Morreale de Escobar, Gabriella, Francisco Escobar del Rey, and **Pilar Llorente Rodriguez.** Activation by Inert Proteins of the Flavin-induced Photodependent Deiodination of Thyroxine, PC2041

Morris, Clayton J., John F. Thompson, Sam Asen, and **Filadelfo Irreverre.** The Isolation of γ-L-Glutamyl-β-alanine from Iris Bulbs, 2180

Morrison, Peter. See *Reynafarje and Morrison,* 2861

Mudd, J. B., and **T. T. McManus.** Metabolism of Acetate by Cell-free Preparations from Spinach Leaves, 2057

Mudd, S. Harvey. Activation of Methionine for Transmethylation. V. The Mechanism of Action of the Methionine-activating Enzyme, PC1372

Mulford, Dwight J. See *Longmore and Mulford,* 694

Muntz, John A., and **Michael Vanko.** The Metabolism of Intraportally Injected Fructose in Rat Liver *in Vivo,* 3582

Murad, F., Y.-M. Chi, T. W. Rall, and **Earl W. Sutherland.** Adenyl Cyclase. III. The Effect of Catecholamines and Choline Esters on the Formation of Adenosine 3′,5′-Phosphate by Preparations from Cardiac Muscle and Liver, 1233

Murphy, Jerome, V. See *Vasington and Murphy,* 2670

Murti, V. V. S. See *Hope, Murti, and du Vigneaud,* 1563

N

Nabors, Charles J., Jr. See *Berliner, Cazes, and Nabors,* 2478

Nagel, Charles W. See *Hasegawa and Nagel,* 619

Naito, Koji, and **Fred H. Wilt.** The

Conversion of Vitamin A_1 to Retinene$_2$ in a Fresh-water Fish, 3060

Nakamoto, Tokumasa. See *Westley and Nakamoto,* 547

Nakamura, Shigenobu. See *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi,* PC2043

—. See *Nishizuka, Ichiyama, Nakamura, and Hayaishi,* P3268

Nakayama, T. O. M. See *Yokoyama, Nakayama, and Chichester,* 681

Narahara, H. T. See *Özand, Narahara, and Cori,* 3037

Nath, M. C. See *Belkhode and Nath,* 1742

Nathenson, Stanley G., and **Jack L. Strominger.** Enzymatic Synthesis and Immunochemistry of *N*-Acetylglucosaminylribitol Linkages in the Teichoic Acids of *Staphylococcus aureus* Strains, PC3839

—. See *Sanderson, Strominger, and Nathenson,* 3603

Neims, Allen H., and **Leslie Hellerman.** Specificity of the D-Amino Acid Oxidase in Relation to Glycine Oxidase Activity, PC976

Nelson, Charles A., and **J. P. Hummel.** Reversible Denaturation of Pancreatic Ribonuclease by Urea, 1567

—, —, **C. A. Swenson,** and **L. Friedman.** Stabilization of Pancreatic Ribonuclease against Urea Denaturation by Anion Binding, 1575

Nelson, Dennis R. See *Fromm and Nelson,* 215

Nemer, Martin. Characteristics of the Utilization of Nucleosides by Embryos of *Paracentrotus lividus,* 143

Nemeth, Andrew M. The Effect of 5-Fluorouracil on the Developmental and Adaptive Formation of Tryptophan Pyrrolase, 3703

—, and **G. de la Haba.** The Effect of Puromycin on the Developmental and Adaptive Formation of Tryptophan Pyrrolase, 1190

Némethy, George. See *Scheraga, Némethy, and Steinberg,* 2506

Neubert, Diether, and **Albert L. Lehninger.** The Effect of Thiols and Disulfides on Water Uptake and Extrusion by Rat Liver Mitochondria, 952

—, **Turpin H. Rose,** and **Albert L. Lehninger.** Assay and Cellular Distribution of Mitochondrial "Contraction Factor," 2025

Neuhaus, Francis C. The Enzymatic Synthesis of D-Alanyl-D-alanine. I. Purification and Properties of D-Alanyl-D-alanine Synthetase, 778

—. The Enzymatic Synthesis of D-Alanyl-D-alanine. II. Kinetic Studies on D-Alanyl-D-alanine Synthetase, 3128

Newman, H. A. I., and **D. B. Zilversmit.** Quantitative Aspects of Cholesterol Flux in Rabbit Atheromatous Lesions, 2078

Newman, Mary. See *Smith, Newman, Leach, and Henderson,* 1194

Newton, Jack W. A Disulfide Photoreduction System in Chromatophores of *Rhodospirillum rubrum,* 3282

Nichol, Charles A. See *Roberts and Nichol,* 2278

Nicholas, Harold J. Biosynthesis of β-Sitosterol and Pentacyclic Triterpenes of *Saliva officinalis,* 1476

—. Biosynthesis of Sclaroel, β-Sitosterol, and Oleanolic Acid from Mevalonic Acid-2-C^{14}, 1481

—. Biosynthesis of β-Sitosterol and Certain Terpenoid Substances in *Ocimum basilicum* from Mevalonic Acid-2-C^{14}, 1485

Nicholls, Doris, Julian Kanfer, and **Elwood Titus.** The Effect of Ouabain on the Incorporation of Inorganic P^{32} into Phospholipid, 1043

Nichols, George, Jr. See *Flanagan and Nichols,* 3686

Nishizuka, Yasutomi, and **Osamu Hayaishi.** Enzymic Formation of Lactobionic Acid From Lactose, 2721

—, **Arata Ichiyama, Shigenobu Nakamura,** and **Osamu Hayaishi.** A New Metabolic Pathway of Catechol, PC268

—. See *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi,* PC2043

Nolan, Chris, and **Emil L. Smith.** Glycopeptides. II. Isolation and Properties of Glycopeptides from Rabbit γ-Globulin, 446

—, and —. Glycopeptides. III. Isolation and Properties of Glycopeptides from a Bovine Globulin of Colostrum and from Fraction II-3 of Human Globulin, 453

Noltmann, Ernst A., Theodore A. Mahowald, and **Stephen A. Kuby.** Studies on Adenosine Triphosphate Transphosphorylases. II. Amino Acid Composition of Adenosine Triphosphate-Creatine Transphosphorylase, 1146

—. See *Mahowald, Noltmann, and Kuby,* 1138, 1536

Nordin, B. E. C. See *MacGregor and Nordin,* 2704

Noronha, John M., and **Milton Silverman.** Distribution of Folic Acid Derivatives in Natural Material. I. Chicken Liver Folates, 3299

Norton, S. J. See *Ravel, Norton, Humphreys, and Shive,* 2845

Novoa, William B., and **Santiago Grisolia.** Synthesis of Adenosine Triphosphate from Acetyl Phosphate by Carbamyl Phosphate Synthetase, PC2710

Nygaard, Agnar P. D- and L-Lactic Cytochrome *c* Reductases of Yeast: Interaction of Polyvalent Electrolytes at the Acceptor Sites, 742

—. See *Graae and Nygaard,* 3255

O

O'Brien, Paul J. See *Ginsburg, O'Brien, and Hall,* 497

Ochoa, Severo. See *Kaziro, Hass, Boyer, and Ochoa,* 1460

—. See *Mazumder, Sasakawa, Kaziro, and Ochoa,* 3065

—. See *Rendi and Ochoa,* 3707, 3711

Ogle, James D., Ralph B. Arlinghaus, and **Milan A. Logan.** 3-Hydroxyproline, a New Amino Acid of Collagen, 3667

Ohnishi, Eiji, Helen Macleod, and **N. H. Horowitz.** Mutants of Neurospora Deficient in D-Amino Acid Oxidase, 138

Okazaki, Reiji, Tuneko Okazaki, Jack L. Strominger, and **A. M. Michelson.** Thymidine Diphosphate 4-Keto-6-deoxy-D-glucose, an Intermediate in Thymidine Diphosphate L-Rhamnose Synthesis in *Escherichia coli* Strains, 3014

Okazaki, Tuneko. See *Okazaki, Okazaki, Strominger, and Michelson,* 3014

Olavarria, José M., and **Héctor N. Torres.** Mechanism of Action of Liver α-Amylase, 1746

Olcott, Harold S. See *Brown, Martinez, Johnstone, and Olcott,* 81

Olivero, Edwin. See *Krogmann and Olivero,* 3292

Olson, John M. See *Avi-Dor, Olson, Doherty, and Kaplan,* 2377

Omura, Tsuneo, and **Ryo Sato.** A New Cytochrome in Liver Microsomes, PC1375

Oncley, J. L. See *Eylar, Madoff, Brody, and Oncley,* 1992

Oncley, J. Lawrence. See *Doolittle, Oncley, and Surgenor,* 3123

Ortiz, Priscilla J. See *August, Ortiz, and Hurwitz,* 3786

Osbahr, A. J., and **G. L. Eichhorn.** A Study of Rotatory Dispersion of the Denaturation of Catalase and Peroxidase, 1820

Ove, Peter. See *Lieberman and Ove,* 1634

Özand, Pinar, H. T. Narahara, and **Carl F. Cori.** Studies of Tissue Permeability. VIII. The Effect of Anaerobiosis on Glucose Uptake in Frog Sartorius Muscle, 3037

P

Pabst, Henry F. See *Kay and Pabst,* 727

Packer, Lester. Metabolic and Structural States of Mitochondria. III. Reversal of Electron Transport and Mitochondrial Swelling, 1327

Paiva, Antonio C. M. See *Kimmel, Kato, Paiva, and Smith,* 2525

Palmer, Graham. See *Massey and Palmer,* 2347

—. See *Massey, Hofmann, and Palmer,* 3820

Pamiljans, Vaira. See *Krishnaswamy, Pamiljans, and Meister,* 2932

Pappenheimer, A. M., Jr. See *Torriani and Pappenheimer,* 3

Pardee, Arthur B. See *Gerhart and Pardee,* 891

—. See *Imsande and Pardee,* 1305

Parekh, Amritlal C., and **David Glick.** Studies in Histochemistry. LXV. Heparin and Hexosamine in Isolated Mast Cells: Determination, Intracellular Distribution, and Effects of Biological State, 280

Pastan, Ira, Betty Herring, Phyllis Johnson, and **James B. Field.** Studies on the Mechanism by Which Epinephrine Stimulates Glucose Oxidation in the Thyroid, 287

Pastore, Edward J., and **Morris Friedkin.** The Enzymatic Synthesis of Thymidylate. II. Transfer of Tritium from Tetrahydrofolate to the Methyl Group of Thymidylate, 3802

—. See *Friedkin, Crawford, Donovan, and Pastore,* 3811

Pazur, John H., and **Kjell Kleppe.** The Hydrolysis of α-D-Glucosides by Amyloglucosides from *Aspergillus niger,* 1002

Pearlman, William H. See *Huang and Pearlman,* 1060

Peck, H. D., Jr. The Role of Adenosine-5′-phosphosulfate in the Reduction of Sulfate to Sulfite by *Desulfovibrio desulfuricans,* 198

—, and **E. Fisher, Jr.** The Oxidation of Thiosulfate and Phosphorylation in Extracts of *Thiobacillus thioparus,* 190

—, and **M. P. Stulberg.** O^{18} Studies on the Mechanism of Sulfate Formation and Phosphorylation in Extracts of *Thiobacillus thioparus,* 1648

Peel, J. L. Vitamin B_{12} Derivatives and the CO_2-Pyruvate Exchange Reaction: A Reappraisal, PC263

Peeters, Georges J. See *Hansen, Wood, Peeters, Jacobson, and Wilken,* 1034

Peisach, J., and **Harold J. Strecker.** The Interconversion of Glutamic Acid and Proline. V. The Reduction of Δ^1-Pyrroline-5-carboxylic Acid to Proline, 2255

Perkoff, Gerald T., Robert L. Hill, Douglas M. Brown, and **Frank H. Tyler.** The Characterization of Adult Human Myoglobin, 2820

Peter, J. B. See *Boyer, DeLuca, Ebner, Hultquist, and Peter,* PC3306

Peterkofsky, Alan. The Mechanism of Action of Histidase: Amino-enzyme Formation and Partial Reactions, 787

—. See *Weissbach, Redfield, and Peterkofsky,* 3217

Peterkofsky, Beverly. See *Prockop, Peterkofsky, and Udenfriend,* 1581

Petermann, Mary L. See *Hamilton, Cavalieri, and Petermann,* 1155

Peters, Edmund L. See *Tower, Peters, and Wherrett,* 1861

Peters, Theodore, Jr. The Biosynthesis of Rat Serum Albumin. I. Properties of Rat Albumin and Its Occurrence in Liver Cell Fractions, 1181

—. The Biosynthesis of Rat Serum Albumin. II. Intracellular Phenomena in the Secretion of Newly Formed Albumin, 1186

—. The Biosynthesis of Rat Serum Albumin. III. Amino Acid Composition of Rat Albumin, 2182

Pettengill, Olive S., and **William H. Fishman.** The Preparation and Purification of β-Glucuronidase from Mouse Liver, Kidney, and Urine, 24

Phaff, H. J. See *Snyder and Phaff,* 2438

Phillips, Alvah H., and **Robert G. Langdon.** Hepatic Triphosphopyridine Nucleotide-Cytochrome *c* Reductase: Isolation, Characterization, and Kinetic Studies, 2652

Pieringer, Ronald A., and **Lowell E. Hokin.** Biosynthesis of Lysophosphatidic Acid from Monoglyceride and Adenosine Triphosphate, 653

—, and —. Biosynthesis of Phosphatidic Acid from Lysophosphatidic Acid and Palmityl Coenzyme A, 659

Pihl, Alexander, and **Rolf Lange.** The Interaction of Oxidized Glutathione, Cystamine Monosulfide, and Tetrathionate with the —SH Groups of Rabbit Muscle D-Glyceraldehyde 3-Phosphate Dehydrogenase, 1356

Pizer, Lewis I., and **Seymour S. Cohen.** Virus-induced Acquisition of Metabolic Function. V. Purification and Properties of the Deoxycytidylate Hydroxymethylase and Studies on its Origin, 1251

Plazin, John. See *Van Slyke and Plazin,* 3296

Poncet, Inna. See *Miller, Poncet, and Takacs,* 968

Ponticorvo, L. See *Rittenberg and Ponticorvo,* PC2709

Pontremoli, S., and **G. Mangiarotti.** A Simple Method for the Preparation of D-Ribulose 5-Phosphate, 643

—. See *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti,* 3597

Popenoe, Edwin A., and **Donald D. Van Slyke.** The Formation of Collagen Hydroxylysine, 3491

Popják, G., J. W. Cornforth, Rita H. Cornforth, R. Ryhage, and **DeWitt S. Goodman.** Studies on the Biosynthesis of Cholesterol. XVI. Chemical Synthesis of 1-H_2^3-2-C^{14}- and 1-D_2-2-C^{14}-*trans-trans*-Farnesyl Pyrophosphate and Their Utilization in Squalene Biosynthesis, 56

Potts, John T., Arieh Berger, Juanita Cooke, and **Christian B. Anfinsen.** A Reinvestigation of the Sequence of Residues 11 to 18 in Bovine Pancreatic Ribonuclease, 1851

Pratt, E. A. See *Lehman, Roussos, and Pratt,* 819, 829

Preiss, Jack, and **Gilbert Ashwell.** Alginic Acid Metabolism in Bacteria. I. Enzymatic Formation of Unsaturated Oligosaccharides and 4-Deoxy-L-*erythro*-5-hexoseulose Uronic Acid, 309

—, and —. Alginic Acid Metabolism in Bacteria. II. The Enzymatic Reduction of 4-Deoxy-L-*erythro*-5-hexoseulose Uronic Acid to 2-Keto-3-deoxy-D-gluconic Acid, 317

Pressman, David. See *Stelos and Pressman*, 3679
Price, J. M. See *Kaihara and Price*, 1727
Price, Vincent E., William R. Sterling, Vincent A. Tarantola, Robert W. Hartley, Jr., and **Miloslav Rechcigl, Jr.** The Kinetics of Catalase Synthesis and Destruction *in Vivo*, 3468
Pricer, W. E., Jr. See *Rabinowitz and Pricer*, 2898
di Prisco, Guido. See *Vescia and di Prisco*, 2318
Prockop, Darwin J., Beverly Peterkofsky, and **Sidney Udenfriend.** Studies on the Intracellular Localization of Collagen Synthesis in the Intact Chick Embryo, 1581
—. See *Katz, Prockop, and Udenfriend*, 1585
Pumphrey, Alison M. Studies on the Electron Transfer System. XLV. Some Effects of Antimycin on Cytochrome *b*, 2384
Putnam, Frank W., Margaret Tan, Lydia T. Lynn, Caroline W. Easley, and **Shunsuke Migita.** The Cleavage of Rabbit γ-Globulin by Papain, 717

Q

Quinn, Rita C. See *Isselbacher, Chrabas, and Quinn*, 3033

R

Rabinovitz, M., and **J. M. Fisher.** A Dissociative Effect of Puromycin on the Pathway of Protein Synthesis by Ehrlich Ascites Tumor Cells, 477
Rabinowitz, Jesse C., and **W. E. Pricer, Jr.** Formyltetrahydrofolate Synthetase. I. Isolation and Crystallization of the Enzyme, 2898
—. See *Himes and Rabinowitz*, 2903, 2915
Rachinsky, Michael R. See *Clark, Rachinsky, and Foster*, 2509
Racker, E. See *Rose and Racker*, 3279
Racker, Efraim. See *Goldberg and Racker*, PC3841
Radding, Charles M., John Josse, and **Arthur Kornberg.** Enzymatic Synthesis of Deoxyribonucleic Acid. XII. A Polymer of Deoxyguanylate and Deoxycytidylate, 2869
—, and **Arthur Kornberg.** Enzymatic Synthesis of Deoxyribonucleic Acid. XIII. Kinetics of Primed and *de Novo* Synthesis of Deoxynucleotide Polymers, 2877
Rajagopalan, K. V., Irwin Fridovich, and **Philip Handler.** Hepatic Aldehyde Oxidase. I. Purification and Properties, 922
Rall, T. W., and **Earl W. Sutherland.** Adenyl Cyclase. II. The Enzymatically Catalyzed Formation of Adenosine 3′,5′-Phosphate and Inorganic Pyrophosphate from Adenosine Triphosphate, 1228
—. See *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239
—. See *Murad, Chi, Rall, and Sutherland*, 1233
—. See *Sutherland, Rall, and Menon*, 1220
Ramachandran, S. See *Ringold, Ramachandran, and Forchielli*, PC260
Ramamurti, K., and **C. P. Jackson.** Formation of D-Glucose, Cellibiose, and Other Saccharides during Synthesis of Cellulose by *Acetobacter acetigenum* in a Lactate-buffered Glycerol Medium, 2434
Ramasastri, B. V., and **R. L. Blakley.** 5,10-Methylenetetrahydrofolic Dehydrogenase from Bakers' Yeast. I. Partial Purification and Some Properties, 1982
Rao, D. Rajagopal, and **Victor W. Rodwell.** Metabolism of Pipecolic Acid in a *Pseudomonas* Species. I. α-Aminodipic and Glutamic Acids, 2232
—. See *Basso, Rao, and Rodwell*, 2239
Rao, N. Appaji. See *Mackler, Collipp, Duncan, Rao, and Huennekens*, 2968
Rapport, Maurice M., Herbert Schneider, and **Liselotte Graf.** Immunochemical Studies of Organ and Tumor Lipids. XI. A Simplified Preparation of Cytolipin H, 1056
—. See *Gottfried and Rapport*, 329
Ravel, Joanne M., S. J. Norton, Jean S. Humphreys, and **William Shive.** Asparagine Biosynthesis in *Lactobacillus arabinosus* and Its Control by Asparagine through Enzyme Inhibition and Repression, 2845
—. See *Smith, Ravel, Lax, and Shive*, 3566
Ray, William J., Jr., and **D. E. Koshland, Jr.** Identification of Amino Acids Involved in Phosphoglucomutase Action, 2493
Read, W. O., and **J. D. Welty.** Synthesis of Taurine and Isethionic Acid by Dog Heart Slices, 1521
—. See *Welty, Read, and Shaw*, 1160
Rechcigl, Miloslav, Jr. See *Price, Sterling, Tarantola, Hartley, and Rechcigl*, 3468
Reddy, William J., and **D. Mark Hegsted.** The Measurement and Distribution of Carnosine in the Rat, 705
Redfield, Betty G. See *Weissbach, Redfield, and Peterkofsky*, 3217
Reich, Paul. See *Tsutsui, Marks, and Reich* 3009
Reichard, Peter. Enzymatic Synthesis of Deoxyribonucleotides. I. Formation of Deoxycytidine Diphosphate from Cytidine Diphosphate with Enzymes from *Escherichia coli*, 3513
Reid, Mary R. See *Tomisek and Reid*, 807
Reiss, Oscar K., Leslie Hellerman, John A. Ambrose, Charles I. Smith, M. K. Gey, and **Anne E. Iber.** Pyruvate Metabolism. III. Formation of Citrate in Ascitic Nodules from a Strain of Walker Rat Mammary Carcinoma 256, 992
—. See *Hellerman, Reiss, and Gey*, 997
Rem, Leona T. See *Eichel and Rem*, 940
Rendi, Renzo, and **Severo Ochoa.** Species Specificity in Activation and Transfer of Leucine from Carrier Ribonucleic Acid to Ribosomes, 3707
—, and —. Effect of Chloramphenicol on Protein Synthesis in Cell-free Preparations of *Escherichia coli*, 3711
Renold, Albert E. See *Leboeuf, Renold, and Cahill*, 988
Renson, Jean, Herbert Weissbach, and **Sidney Udenfriend.** Hydroxylation of Tryptophan by Phenylalanine Hydroxylase, 2261
Repaske, Roy. The Electron Transport System of *Hydrogenomonas eutropha*. I. Diphosphopyridine Nucleotide Reduction by Hydrogen, 1351
Ressler, Charlotte. Isolation and Identification from Common Vetch of the Neurotoxin β-Cyano-L-alanine, a Possible Factor in Neurolathyrism, 733
Reynafarje, Baltazar, and **Peter Morrison.** Myoglobin Levels in Some Tissues from Wild Peruvian Rodents Native to High Altitude, 2861
Reynolds, E. S., R. E. Thiers, and **B. L. Vallee.** Mitochondrial Function and Metal Content in Carbon Tetrachloride Poisoning, 3546
Reynolds, John J., and **Gene M. Brown.** Enzymatic Formation of the Pteridine Moiety of Folic Acid from Guanine Compounds, PC2713
Rhodes, C. K. See *Sophianopoulos*,

Rhodes, Holcomb, and Van Holde, 1107

Rich, Alexander. See *Green, Mathews, and Rich*, PC3573

Richards, Frederic M., and **A. D. Logue.** Changes in Absorption Spectra in the Ribonuclease-S System, 3693

Richert, Dan A., Ralf Amberg, and **Margaret Wilson.** Metabolism of Glycine by Avian Liver, 99

Rickli, Egon E., and **John T. Edsall.** Zinc Binding and the Sulfhydryl Group of Human Carbonic Anhydrase, PC258

Ringler, Robert L. See *Minakami, Ringler, and Singer*, 569

Ringold, H. J., S. Ramachandran, and **Enrico Forchielli.** Novel Enzymatic Reduction of Steroids *in Vitro*: Allyl Alcohol Formation, PC260

Rittenberg, D., and **L. Ponticorvo.** On the Quantitative Significance of the Pentose Pathway in *Escherichia coli*, PC2709

Rizvi, Saiyid. See *Mora, Young, and Rizvi*, 157

Robbins, Phillips W., and **James B. Hammond.** Evidence for the Formation of Pseudouridine by the Rearrangement of a Uridine Derivative, PC1379

Roberts, DeWayne, and **Charles A. Nichol.** Biosynthesis of Thymine and Formyltetrahydrofolate by Vitamin B_{12}-deficient Cells of *Lactobacillus leichmannii*, 2278

Robinson, J. C., L. Keay, Rubens Molinari, and **Irwin W. Sizer.** L-α-Hydroxy Acid Oxidases of Hog Renal Cortex, 2001

Rodwell, Victor W. See *Basso, Rao, and Rodwell*, 2239

—. See *Rao and Rodwell*, 2232

Rongone, Edward L., and **Albert Segaloff.** Isolation of Urinary Metabolites of 17 α-Methyltestosterone, 1066

Rose, Irwin A., R. Kellermeyer, Rune Stjernholm, and **Harland G. Wood.** The Distribution of C^{14} in Glycogen from Deuterated Glycerol-C^{14} as a Measure of the Effectiveness of Triosephosphate Isomerase *in vivo*, 3325

Rose, Turpin H. See *Neubert, Rose, and Lehninger*, 2025

Rose, Zelda B., and **E. Racker.** Formaldehyde Dehydrogenase from Bakers' Yeast, 3279

Roseman, Saul. See *Brunetti, Jourdian, and Roseman*, 2447

Roseman, Saul. See *Jourdian and Roseman*, 2442

Rosenberg, Eugene, and **Stephen Zamenhof.** A New Naturally Occurring Disaccharide, β-D-Ribofuranosyl β-D-Ribofuranoside, 1040

Rosenberg, Leon E., Sylvia J. Downing, and **Stanton Segal.** Competitive Inhibition of Dibasic Amino Acid Transport in Rat Kidney, 2265

Rosenfeld, George. See *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085

Rosenheck, K. See *Glazer and Rosenheck*, 3674

Rosenzweig, Mark R. See *Bennett, Drori, Krech, Rosenzweig, and Abraham*, 1758

Rossi-Fanelli, Alessandro. See *Antonini, Wyman, Rossi-Fanelli, and Caputo*, 2773

Rosso, R. G. See *Segal, Rosso, Hopper, and Weber*, PC3303

Rothstein, Morton, Keith E. Cooksey, and **David M. Greenberg.** Metabolic Conversion of Pipecolic Acid to α-Aminoadipic Acid, 2828

Roussos, G. G. See *Lehman, Roussos, and Pratt*, 819, 829

Royster, Betty. See *Wynn, Gibbs, and Royster*, 1892

Rudney, Harry. See *Kirtley, Rudney, and Durr*, 1781

Rushizky, George W., and **Herbert A. Sober.** Characterization of the Major Compounds in Ribonuclease T_1 Digests of Ribonucleic Acid. I. Mono-, Di-, and Trinucleotides, 834

—, and —. Characterization of the Major Compounds Found in Ribonuclease T_1 Digests of Ribonucleic Acid. II. Tetranucleotides, 2883

Rowland, Lewis P. See *Abramsky, Rowland, and Shemin*, PC265

Ryan, Elizabeth M. See *Levy, Ryan, Springhorn, and Koshland*, PC1730

Ryhage, R. See *Popják, Cornforth, Cornforth, Ryhage, and Goodman*, 56

S

Sacktor, Bertram, and **Arthur Dick.** Pathways of Hydrogen Transport in the Oxidation of Extramitochondrial Reduced Diphosphopyridine Nucleotide in Flight Muscle, 3259

Sallach, H. J. See *Willis and Sallach*, 910

Samorodin, A. J. See *Strohman and Samorodin*, 363

Samuelsson, Bengt. See *Bergstrom and Samuelsson*, PC3005

Sanderson, Arnold R., Jack L. Strominger, and **Stanley G. Nathenson.** Chemical Structure of Teichoic Acid from *Staphylococcus aureus*, strain Copenhagen, 3603

Sands, R. H. See *Beinert, Griffiths, Wharton, and Sands*, 2337

Sanghvi, Ajitkumar T. See *Frantz, Sanghvi, and Clayton*, 3381

San Julian, J. See *Miles, Morey, Crain, Gross, San Julian, and Canady*, 1319

Sarid, Sarah, Arieh Berger, and **Ephraim Katchalski.** Proline Iminopeptidase. II. Purification and Comparison with Iminodipeptidase (Prolinase), 2207

Sarkar, Satyapriya. See *Zeller and Sarkar*, 2333

Saroff, H. A., and **William R. Carroll.** The Binding of Chloride and Sulfate Ions to Ribonuclease, 3384

Sasakawa, Taiji. See *Mazumder, Sasakawa, Kaziro, and Ochoa*, 3065

Sato, Ryo. See *Omura and Sato*, PC1375

Savard, Kenneth. See *Mason, Marsh, and Savard*, 1801

Sawai, Teruo, and **Edward J. Hehre.** A Novel Amylase (*Candida* Transglucosyl-amylase) That Catalyzes Glucosyl Transfer from Starch and Dextrins, 2047

Saz, Howard J., and **Alice Weil.** Pathway of Formation of α-Methylvalerate by *Ascaris lumbricoides*, 2053

Scarano, Eduardo, Luisa Bonaduce, and **Benita De Petrocellis.** The Enzymatic Aminohydrolysis of 4-Aminopyrimidine Deoxyribonucleotides. III. Purification and Properties of 2′-Deoxyribosyl 4-Aminopyrimidone-2,5′-phosphate Aminohydrolase from Monkey Liver, 3742

Scheinberg, I. Herbert. See *Morell, Aisen, and Scheinberg*, 3455

Schejter, A. See *Margoliash and Schejter*, 2359

Scheraga, Harold A., George Némethy, and **Izchak Z. Steinberg.** The Contribution of Hydrophobic Bonds to the Thermal Stability of Protein Conformations, 2506

Scheuerbrandt, Günter, and **Konrad Bloch.** Unsaturated Fatty Acids in Microorganisms, 2064

—. See *Lennarz, Scheuerbrandt, and Bloch*, 664

Schimke, Robert T. Adaptive Characteristics of Urea Cycle Enzymes in the Rat, 459

—. Differential Effects of Fasting and

Protein-free Diets on Levels of Urea Cycle Enzymes in Rat Liver, 1921
Schirch, LaVerne, and **Merle Mason.** Serine Transhydroxymethylase: Spectral Properties of the Enzyme-bound Pyridoxal-5-phosphate, 2578
Schrimer, E. W. See *Folk, Wolff, and Schirmer,* 3100
—. See *Folk, Wolff, Schirmer, and Cornfield,* 3105
—. See *Wolff, Schirmer, and Folk,* 3094
Schmid, Walter. See *Caspi, Dorfman, Khan, Rosenfeld, and Schmid,* 2085
Schmidt, William R. See *Hill and Schmidt,* 389
—. See *Margoliash, Kimmel, Hill, and Schmidt,* 2148
Schneider, Herbert. See *Rapport, Schneider, and Graf,* 1056
Schneider, Walter C. Further Studies on the Assay of Deoxyribosyl Compounds in Tissue Extracts, 1405
Schonbaum, Gregory R. See *Chance and Schonbaum,* 2391
Schwartz, Sorell L. See *McKennis, Turnbull, Schwartz, Tamaki, and Bowman,* 541
Schweet, Richard S. See *Allen and Schweet,* 760
Schwert, George W., David B. S. Millar, and **Yasuo Takenaka.** Preparation of Crystalline Lactic Dehydrogenase from Beef Heart, 2131
Scott, Edward M., and **James C. McGraw.** Purification and Properties of Diphosphopyridine Nucleotide Diaphorase of Human Erythrocytes, 249
Scott, Robert B., and **George Bosworth Brown.** The Action of Xanthine Oxidase on Some 2-Substituted Adenines, 3215
Scotto, Gloria T. See *Thomson, Scotto, and Brown,* 3510
Seal, Ulysses S., and **R. P. Doe.** Corticosteroid-binding Globulin. I. Isolation from Plasma of Diethylstilbestrol-treated Men, 3136
Seegers, Walter H. See *Harmison and Seegers,* 3074
Segal, H. L., Diana S. Beattie, and **Sarah Hopper.** Purification and Properties of Liver Glutamic-Alanine Transaminase from Normal and Corticoid-treated Rats, 1914
Segal, Harold L., R. G. Rosso. Sarah Hopper, and **Morton M. Weber.** Direct Evidence for an Increase in Enzyme Level as the Basis for the Glucocorticoid-induced Increase in Glutamic-Alanine Transaminase Activity in Rat Liver, PC3303
—. See *Hopper and Segal,* 3189
Segal, Stanton. See *Rosenberg, Downing, and Segal,* 2265
Segaloff, Albert. See *Rongone and Segaloff,* 1066
Segovia-Riquelme, Natividad, Iris Campos, Wanda Solodkowska, Graciela Gonzalez, Rosa Alvarado, and **J. Mardones.** Metabolism of Labeled Ethanol, Acetate, Pyruvate, and Butyrate in "Drinker" and "Nondrinker" Rats, 2038
Sekine, T., L. M. Barnett, and **W. Wayne Kielley.** The Active Site of Myosin Adenosine Triphosphatase. I. Localization of One of the Sulfhydryl Groups, 2769
Sekiya, Kazuko. See *Tonomura, Tokura, and Sekiya,* 1074
—. See *Tonomura, Sekiya, and Imamura,* 3110
Sela, Michael. Inhibition of Ribonuclease by Copolymers of Glutamic Acid and Aromatic Amino Acids, 418
—. See *Anfinsen, Sela, and Cooke,* 1825
—. See *Epstein, Anfinsen, and Sela,* 3458
Sellinger, Otto Z., and **F. de Balbian Verster.** Glutamine Synthetase of Rat Cerebral Cortex: Intracellular Distribution and Structural Latency, 2836
Semple, S. J. G., G. Mattock, and **R. Uncles.** A Buffer Standard for Blood pH Measurements, 963
Senior, John R., and **Kurt J. Isselbacher.** Direct Esterification of Monoglycerides With Palmityl Coenzyme A by Intestinal Epithelial Subcellular Fractions, 1454
Shannon, Leland M., and **Abraham Marcus.** γ-Methyl-γ-hydroxy-α-ketoglutaric Aldolase. I. Purification and Properties, 3342
—. See *Marcus and Shannon,* 3348
Sharma, D. C., Enrico Forchielli, and **Ralph I. Dorfman.** Preparation and Properties of a Soluble Steroid 11β-Hydroxylase from Bovine Adrenal Cortex, 1495
Shaw, E. H., Jr. See *Welty, Read, and Shaw,* 1160
Shedlovsky, Alexandra E., and **Boris Magasanik.** A Defect in Histidine Biosynthesis Causing an Adenine Deficiency, 3725
—, and —. The Enzymatic Basis of an Adenine-Histidine Relationship in *Escherichia coli,* 3731
Shemin, David. See *Abramsky, Rowland, and Shemin,* PC265
Sherman, Raymond. See *Greenbaum and Sherman,* 1082
Shibko, S. See *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday,* 2678
Shichi, H., and **D. P. Hackett.** Studies on the *b*-Type Cytochromes from Mung Bean Seedlings. I. Purification of Cytochromes *b*-555 and *b*-561, 2955
—, and —. Studies on the *b*-Type Cytochromes from Mung Bean Seedlings. II. Some Properties of Cytochromes *b*-555 and *b*-561, 2959
Shigeura, Harold T., and **Charles N. Gordon.** Hadacidin, A New Inhibitor of Purine Biosynthesis, 1932
—, and —. The Mechanism of Action of Hadacidin, 1937
Shimizu, Kyutaro, Marcel Gut, and **Ralph I. Dorfman.** 20α,22ξ-Dihydroxycholesterol, an Intermediate in the Biosynthesis of Pregnenolone (3β-Hydroxypregn-5-en-20-one) from Cholesterol, 699
—. See *Chaudhuri, Harada, Shimizu, Gut, and Dorfman,* 703
Shive, William. See *Conway, Lansford, and Shive,* 2850
—. See *Ravel, Norton, Humphreys, and Shive,* 2845
—. See *Smith, Ravel, Lax, and Shive,* 3566
Shrago, Earl. See *Falcone, Mao, and Shrago,* 904
Shull, Kenneth H. Hepatic Phosphorylase and Adenosine Triphosphate Levels in Ethionine-treated Rats, PC1734
Shuster, C. W., and Michael Doudoroff. A Cold-sensitive D(−)β-Hydroxybutyric Acid Dehydrogenase from *Rhodospirillum rubrum,* 603
Silman, H. I., John J. Cebra, and **David Givol.** The Carboxyl Terminal Amino Acids of Rabbit γ-Globulin, 2196
Silverman, Milton. See *Noronha and Silverman,* 3299
Simmonds, Sofia. See *Levine and Simmonds,* 3718
Simmons, Barbara. See *Bertino, Simmons, and Donohue,* 1314
Singer, Maxine F., and **Judith K. Guss.** The Dependence of Reactions Catalyzed by Polynucleotide Phosphorylase on Oligonucleotides, 182

Singer, Thomas P. See *Minakami, Ringler, and Singer,* 569
—. See *Watari, Kearney, Singer, Basinski, Hauber, and Lusty,* PC1731
Singh, Ajaib, Edward R. Thornton, and **F. H. Westheimer.** The Photolysis of Diazoacetylchymotrypsin, PC3006
Siu, Patrick M. L., and **Harland G. Wood.** Phosphoenolpyruvic Carboxytransphosphorylase, a CO_2 Fixation Enzyme from Propionic Acid Bacteria, 3044
Sizer, Irwin W. See *Robinson, Keay, Molinari, and Sizer,* 2001
Sjövall, Jan. See *Danielsson, Eneroth, Hellström, and Sjövall,* 3657
Slautterback, David B. See *Fleischer, Brierley, Klouwen, and Slautterback,* 3264
Smalley, H. M. See *Bu'Lock, Smalley, and Smith,* 1778
Smead, Martha. See *Smith, Connelly, and Smead,* 3207
Smith, Charles I. See *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber,* 992
Smith, Curtis G., Carol Connelly, and **Martha Smead.** The Utilization of the Ureide Carbon of Adenine in the Biosynthesis of Riboflavin in *Eremothecium asybyii,* 3207
Smith, Emil L. See *Kimmel, Kato, Paiva, and Smith,* 2525
—. See *Light and Smith,* 2537
—. See *Margoliash and Smith,* 2151
—. See *Matsubara and Smith,* PC3575
—. See *Nolan and Smith,* 446, 453
Smith, F. H. See *Heinstein, Smith, and Tove,* 2643
Smith, G. N. See *Bu'Lock, Smalley, and Smith,* 1778
Smith, Jack L., and **R. C. Krueger.** Separation and Purification of the Phenolases of the Common Mushroom, 1121
Smith, Louis C., Joanne M. Ravel, Sandra R. Lax, and **William Shive.** The Control of 3-Deoxy-D-*arabino*-heptulosonic Acid 7-Phosphate Synthesis by Phenylalanine and Tyrosine, 3566
Smith, Lucile, and **David C. White.** Structure of the Respiratory Chain System as Indicated by Studies with *Hemophilus parainfluenzae,* 1337
—. See *White and Smith,* 1332
Smith, Thomas E., and **Chozo Mitoma.** Partial Purification and Some Properties of 4-Ketoproline Reductase, 1177
Smith, W. Grady, Mary Newman, Franklin R. Leach, and **L. M. Henderson.** The Effect of Hydroxylysine on Cell Wall Synthesis and Cell Stability in *Streptococcus faecalis,* 1194
—. See *Tsung, Smith, Leach, and Henderson,* 1194
Smith, W. James, and **Norman Kirshner.** Mechanism of 3,4-Dihydroxphenylethylamine-β-hydroxylase, 1890
Smyth, Derek G., William H. Stein, and **Stanford Moore.** On the Sequence of Residues 11 to 18 in Bovine Pancreatic Ribonuclease, 1845
Snell, Esmond E. See *Wada and Snell,* 127, 133
—. See *Wilson and Snell,* 3171, 3180
Snyder, H. E., and **H. J. Phaff.** The Pattern of Action of Inulinase from *Saccharomyces fragilis* on Inulin, 2438
Sober, Herbert A. See *Rushizky and Sober,* 834, 2883
Sogami, Masaru, and **Joseph F. Foster.** Resolution of Oligomeric and Isomeric Forms of Plasma Albumin by Zone Electrophoresis on Polyacrylamide Gel, 2514
Solodkowska, Wanda. See *Segovia-Riquelme, Campos, Solodkowska, Gonzalez, Alvarado, and Mardones,* 2038
Sophianopoulos, A. J., C. K. Rhodes, D. N. Holcomb, and K. E. Van Holde. Physical Studies of Lysozyme. I. Characterization, 1107
Spahr, Pierre-François. See *Allerton, Elwyn, Edsall, and Spahr,* 85
Spencer, Alice F., and **John M. Lowenstein.** The Supply of Precursors for the Synthesis of Fatty Acids, 3640
Spiro, Mary Jane, and **Robert G. Spiro.** Composition of the Peptide Portion of Fetuin, 1507
Spiro, Robert G. Studies on Fetuin, a Glycoprotein of Fetal Serum. II. Nature of the Carbohydrate Units, 382
—. Studies on the Monosaccharide Sequence of the Serum Glycoprotein Fetuin, 646
—. See *Spiro and Spiro,* 1507
Springer, C. M. See *Lavate, Dyer, Springer, and Bentley,* PC2715
Springer, Georg F. See *Bernardi and Springer,* 75
Springhorn, Sylvia S. See *Levy, Ryan, Springhorn, and Koshland,* PC1730
Srinivasan, N. G., John J. Corrigan, and **Alton Meister.** D-Serine in the Blood of the Silkworm *Bombyx mori* and Other Lepidoptera, PC3844
Stadtman, Thressa. Lysine Fermentation to Fatty Acids and Ammonia: A Cobamide Coenzyme-dependent Process, PC2411
Staple, Ezra. See *Suld, Staple, and Gurin,* 338
Stark, George R., and **Charles R. Dawson.** On the Accessibility of Sulfhydryl Groups in Ascorbic Acid Oxidase, 712
Stefanye, David. See *Maxfield and Stefanye,* 2522
Stein, William H. See *Smyth, Stein, and Moore,* 1845
Steinberg, Izchak Z. See *Scheraga, Némethy, and Steinberg,* 2506
Stella, E. J. See *Goldstein, Stella, and Knox,* 1723
Stelos, Peter, and **David Pressman.** Papain Digestion of Antigen-Antibody Precipitates, 3679
Sterling, William R. See *Price, Sterling, Tarantola, Hartley, and Rechcigl,* 3468
Stern, Babette K., and **Birgit Vennesland.** The Effect of Carbon Dioxide on the Hill Reaction, 596
Stjernholm, Rune. See *Rose, Kellermeyer, Stjernholm, and Wood,* 3325
Stoker, J. R., and **D. M. Bellis.** The Biosynthesis of Coumarin in *Melilotus alba,* 2303
Stokes, William M. See *Fish, Boyd, and Stokes,* 334
Strecker, Harold J. See *Johnson and Strecker,* 1876
—. See *Peisach and Strecker,* 2255
Strittmatter, Philipp. Direct Hydrogen Transfer from Reduced Pyridine Nucleotides to Microsomal Cytochrome b_5 Reductase, 3250
Strohman, R. C., and **A. J. Samorodin.** The Requirements for Adenosine Triphosphate Binding to Globular Actin, 363
Strominger, Jack L. Uridine and Guanosine Nucleotides of Hen Oviduct, 1388
—. See *Ito and Strominger,* 2689, 2696
—. See *Mandelstam, Loercher, and Strominger,* 2683
—. See *Nathenson and Strominger,* PC3839
—. See *Okazaki, Okazaki, Strominger, and Michelson,* 3014
—. See *Sanderson, Strominger, and Nathenson,* 3603

Stulberg, M. P. See *Peck and Stulberg*, 1648
Stumpf, P. K. See *Barron and Stumpf*, PC613
Su, Der-Fen. See *Fresco and Su*, PC3305
Sugiyama, Toshiko. See *Byers, Friedman, and Sugiyama*, 3375
Suld, Helga M., Ezra Staple, and Samuel Gurin. Mechanism of Formation of Bile Acids from Cholesterol: Oxidation of 5β-Cholestane-3α,7α,12α-triol and Formation of Propionic Acid from the Side Chain by Rat Liver Mitochondria, 338
Sulkowski, E., and **M. Laskowski, Sr.** Mechanism of Action of Micrococcal Nuclease on Deoxyribonucleic Acid, 2620
Sundaresan, P. R. See *Bamji, Cama, and Sundaresan*, 2747
Sundby, F. Separation and Characterization of Acid-induced Insulin Transformation Products by Paper Electrophoresis in 7 M Urea, 3406
Sung, Shan-ching, and **M. Laskowski, Sr.** A Nuclease from Mung Bean Sprouts, 506
Surgenor, Douglas M. See *Doolittle, Oncley, and Surgenor*, 3123
Sutherland, Earl W., T. W. Rall, and **Tara Menon.** Adenyl Cyclase. I. Distribution, Preparation, and Properties, 1220
—. See *Butcher and Sutherland*. 1244
—. See *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239
—. See *Murad, Chi, Rall, and Sutherland*, 1233
—. See *Rall and Sutherland*, 1228
Suzuki, Sakaru. A Novel Uridine Nucleotide Containing *N*-Acetylglucosamine and Galactose, 1393
Swartz, M. N., T. A. Trautner, and **Arthur Kornberg.** Enzymatic Synthesis of Deoxyribonucleic Acid. XI. Further Studies on Nearest Neighbor Base Sequences in Deoxyribonucleic Acids, 1961
Swenson, C. A. See *Nelson, Hummel, Swenson, and Friedman*, 1575
Swenson, Robert T., Robert L. Hill, Hermann Lehmann, and **Robert T. S. Jim.** A Chemical Abnormality in Hemoglobin G from Chinese Individuals, 1517

T

Takacs, Eva. See *Miller, Poncet, and Takacs*, 968
Takagaki, Genkichiro. See *Berl, Takagaki, Clarke, and Waelsch*, 2562, 2570
Takeda, Yoshiro. See *Ichihara, Adachi, Hosokawa, and Takeda*, 2296
Takenaka, Yasuo. See *Schwert, Millar, and Takenaka*, 2131
Talalay, Paul. See *Adams, Jarabak, and Talalay*, 3069
—. See *Jarabak, Adams, Williams-Ashman, and Talalay*, 345
—. See *Kawahara, Wang, and Talalay*, 1500
Tamaki, Einosuke. See *McKennis, Turnbull, Schwartz, Tamaki, and Bowman*, 541
Tan, Margaret. See *Putnam, Tan, Lynn, Easley, and Migita*, 717
Tanaka, Ryo, and **L. G. Abood.** On the Adenosine Triphosphatase Activity of Rat Brain Mitochondria, 2999
Tanford, Charles, C. E. Buckley III, Paritosh K. De, and **Edmund P. Lively.** Effect of Ethylene Glycol on the Conformation of γ-Globulin and β-Lactoglobulin, 1168
—. See *Whitney and Tanford*, PC1735
Tappel, A. L. See *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday*, 2678
Tarantola, Vincent A. See *Price, Sterling, Tarantola, Hartley, and Rechcigl*, 3468
Taubman, Sheldon B. See *Kaneda, Butte, Taubman, and Corcoran*, 322
Thiers, R. E. See *Reynolds, Thiers, and Vallee*, 3546
Thompson, John F. See *Morris, Thompson, Asen, and Irreverre*, 2180
Thompson, Thomas E. See *Mize, Thompson, and Langdon*, 1596
Thomson, Robert Y., Gloria T. Scotto, and **George Bosworth Brown.** On the Conversion of Cytidine to Deoxycytidine in the Rat, 3510
Thornton, Edward R. See *Singh, Thornton, and Westheimer*, PC3006
Thorogood, E. A Ferrihemoprotein from Lespedeza Nodules, PC267
Titus, Elwood. See *Nicholls, Kanfer, and Titus*, 1043
Tokura, Seiichi. See *Tonomura, Tokura, and Sekiya*, 1074
Tomisek, Arthur J., and **Mary R. Reid.** Chromatographic Studies on Purine Metabolism. V. Inhibition Mechanism of Diazo-oxo-norleucine in Wild-type and in Diazo-oxo-norleucine-resistant *Escherichia coli*, 807
Tomizawa, Henry H. Mode of Action of an Insulin-degrading Enzyme from Beef Liver, 428
—. Properties of Glutathione-Insulin Transhydrogenase from Beef Liver, 3393
Tomkins, Gordon M., K. Lemone Yielding, and **Jean F. Curran.** The Influence of Diethylstilbestrol and Adenosine Diphosphate on Pyridine Nucleotide Coenzyme Binding by Glutamic Dehydrogenase, 1704
Tono, Henrique, and **Seymour S. Cohen.** The Activity of Nucleoside Phosphorylase on 1-β-D-Arabinosyluracil within *Escherichia coli*, 1271
Tonomura, Yuji, Shotaro Kitagawa, and **Junko Yoshimura.** The Initial Phase of Myosin A-Adenosine Triphosphatase and the Possible Phosphorylation of Myosin A, 3660
—, **Kazuko Sekiya,** and **Kiichi Imamura.** The Optical Rotatory Dispersion of Myosin A. I. Effect of Inorganic Salt, 3110
—, **Seiichi Tokura,** and **Kazuko Sekiya.** Binding of Myosin A to F-Actin, 1074
Torres, Héctor N. See *Olavarria and Torres*, 1746
Torriani, Annamaria, and **A. M. Pappenheimer, Jr.** Inducible Polysaccharide Depolymerases of *Bacillus palustris*, 3
Tove, S. B. See *Heinstein, Smith, and Tove*, 2643
Tower, Donald B., Edmund L. Peters, and **John R. Wherrett.** Determination of Protein-bound Glutamine and Asparagine, 1861
Trautner, T. A. See *Swartz, Trautner, and Kornberg*, 1961
Troll, Walter. See *Belman and Troll*, 746
Tsung, C. M., W. Grady Smith, Franklin R. Leach, and **L. M. Henderson.** Hydroxylysine Metabolism in *Streptococcus faecalis*, 1194
Tsutsui, Ethel Ashworth, Paul A. Marks, and **Paul Reich.** Effect of Dehydroepiandrosterone on Glucose 6-Phosphate Dehydrogenase Activity and Reduced Triphosphopyridine Nucleotide Formation in Adrenal Tissue, 3009
Tucker, Donald, and **Santiago Grisolia.** Inactivation of Muscle Triosephosphate Dehydrogenase by Reduced Diphosphopyridine Nucleotide at Physiological Concentrations, 1068
Turnbull, Lennox B. See *McKennis, Turnbull, Schwartz, Tamaki, and Bowman*, 541
Turner, John F., Clanton C. Black, and **Martin Gibbs.** Studies on Photo-

synthetic Processes. I. The Effect of Light Intensity on Triphosphopyridine Nucleotide Reduction, Adenosine Triphosphate Formation, and Carbon Dioxide Assimilation in Spinach Chloroplasts, 577

—. See *Black, Turner, Gibbs, Krogmann, and Gordon*, 580

Twarog, R., and **R. S. Wolfe.** Enzymatic Phosphorylation of Butyrate, 2474

Tyler, Frank H. See *Perkoff, Hill, Brown, and Tyler*, 2820

U

Udaka, Shigezo, and **Birgit Vennesland.** Properties of Triphosphopyridine Nucleotide-linked Dihydroorotic Dehydrogenase, 2018

Udenfriend, Sidney. See *Guroff and Udenfriend*, 803

—. See *Katz, Prockop, and Udenfriend*, 1585

—. See *Lovenberg, Weissbach, and Udenfriend*, 89

—. See *Prockop, Peterkofsky, and Udenfriend*, 1581

—. See *Renson, Weissbach, and Udenfriend*, 2261

Ulick, Stanley, and **Kathryn Kusch Vetter.** Identification of Two C_{18} Oxygenated Corticosteroids Isolated from Human Urine, 3364

Uncles, R. See *Semple, Mattock, and Uncles*, 963

Ungar, F. See *Alivisatos, LaMantia, Ungar, and Matijevitch*, 1212

Unterholzner, W. C. See *Georgatsos, Unterholzner, and Laskowski*, 2626

Utter, Merton F. See *Mendicino and Utter*, 1716

V

Vagelos, P. Roy. See *Martin and Vagelos*, 1787

Valentine, R. C., R. Bojanowski, Elizabeth Gaudy, and **R. S. Wolfe.** Mechanism of the Allantoin Fermentation, 2271

Vallee, B. L. See *Reynolds, Thiers, and Vallee*, 3546

Vallee, Bert L. See *Coleman and Vallee*, 3430

Vanderheiden, Bernardo S., Josephine O. Meinhart, R. Gene Dodson, and **Edwin G. Krebs.** The Preparation and Properties of Crystalline Yeast Aldolase, 2095

Van Holde, K. E. See *Sophianopoulos, Rhodes, Holcomb, and Van Holde*, 1107

Vanko, Michael. See *Muntz and Vanko*, 3582

Van Pilsum, John F., and **Thomas M. Canfield.** Transamidinase Activities, *in Vitro*, of Kidneys from Rats Fed Diets Supplemented with Nitrogen-containing Compounds, 2574

Van Slyke, Donald D., and **John Plazin.** Determination of Carbon and Its Radioactivity. IV. Transfer of CO_2 to Counting Tubes without Use of Liquid Nitrogen, 3296

—. See *Popenoe and Van Slyke*, 3491

Vasington, Frank D., and **Jerome V. Murphy.** Ca^{++} Uptake by Rat Kidney Mitochondria and its Dependence on Respiration and Phosphorylation, 2670

Vaughan, Martha. The Production and Release of Glycerol by Adipose Tissue Incubated *in Vitro*, 3354

—. See *Margolis and Vaughan*, 44

Vavra, John. See *Velick and Vavra*, 2109

Veiga, L. A. See *Chakravorty, Veiga, Bacila, and Horecker*, 1014

Velick, Sidney F., and **John Vavra.** A Kinetic and Equilibrium Analysis of of Glutamic Oxaloacetate Transaminase Mechanism, 2109

Vennesland, Birgit. See *Stern and Vennesland*, 596

—. See *Udaka and Vennesland*, 2018

Vescia, Alessandro, and **Guido di Prisco.** Studies on Purified 3-Hydroxyanthranilic Acid Oxidase, 2318

Vetter, Kathryn Kusch. See *Ulick and Vetter*, 3364

Vickery, Hubert Bradford. A Suggested New Nomenclature for the Isomers of Isocitric Acid, 1739

du Vigneaud, Vincent. See *Hope, Murti, and du Vigneaud*, 1563

—. See *Hope and du Vigneaud*, 3146

Volk, Wesley A. Purification and Properties of D-Arabinokinase from *Propionibacterium pentosaceum*, 19

—, and **J. L. Larsen.** β-Keto-L-gulonic Acid as an Intermediate in the Bacterial Metabolism of Ascorbic Acid, 2454

Volpenhein, R. A. See *Mattson and Volpenhein*, 53

W

Wada, Hiroshi, and **Esmond E. Snell.** Enzymatic Transamination of Pyridoxamine. I. With Oxaloacetate and α-Ketoglutarate, 127

—, and —. Enzymatic Transamination of Pyridoxamine. II. Crystalline Pyridoxamine-Pyruvate Transaminase, 133

Waelsch, Heinrich. See *Berl, Takagaki, Clarke, and Waelsch*, 2562, 2570

Wagner, Arthur F. See *Asano, Brodie, Wagner, Wittreich, and Folkers*, PC2411

Wahba, Albert J., and **Morris Friedkin.** The Enzymatic Synthesis of Thymidylate. I. Early Steps in the Purification of Thymidylate Synthetase of *Escherichia coli*, 3794

Wahl, Rosemarie, and **Lloyd M. Kozloff.** The Nucleoside Triphosphate Content of Various Bacteriophages, 1953

Wainio, W. W. See *McGuinness and Wainio*, 3273

Waite, Moseley, and **Salih J. Wakil**, Studies on the Mechanism of Fatty Acid Synthesis. XII. Acetyl Coenzyme A Carboxylase, 2750

Wakil, Salih J., and **Rubin Bressler.** Studies on the Mechanism of Fatty Acid Synthesis. X. Reduced Triphosphopyridine Nucleotide-Acetoacetyl Coenzyme A Reductase, 687

—. See *Bressler and Wakil*, 1441

—. See *Waite and Wakil*, 2750

Walker, James B. See *Walker and Walker*, 473

Walker, Margaret S., and **James B. Walker.** Repression of Transamidinase Activity during Embryonic Development, 473

Wang, Chih H., and **Julia K. Krackov.** The Catabolic Fate of Glucose in *Bacillus subtilis*, 3614

Wang, Shu-Fang. See *Kawahara, Wang, and Talalay*, 1500

Warren, Leonard, and **Robert S. Blacklow.** The Biosynthesis of Cytidine 5′-Monophospho-*N*-acetylneuraminic Acid by an Enzyme from *Neisseria meningitidis*, 3527

—, and **Herbert Felsenfeld.** The Biosynthesis of Sialic Acids, 1421

—. See *Blacklow and Warren*, 3520

Watanabe, Shizuo. See *Maruyama and Watanabe*, 3437

Watari, H., Edna B. Kearney, Thomas P. Singer, D. Basinski, J. Hauber, and **C. J. Lusty.** A Comparison of Reduced Nicotinamide Adenine Dinucleotide-Cytochrome *c* Reductases from Heart Mitochondria and Their Formation from the Respiratory Chain-linked Dehydrogenase, PC1731

Watkins, Winifred M., and **W. Z. Hassid.** The Synthesis of Lactose by Particulate Enzyme Preparations from Guinea Pig and Bovine Mammary Glands, 1432
Weber, Morton M. See *Segal, Rosso, Hopper, and Weber,* PC3303
Webster, Leslie T., Jr., and **Francesco Campagnari.** The Biosynthesis of Acetyl and Butyryl Adenylates, 1050
Weibull, Claes, John W. Greenawalt, and **Hans Löw.** The Hydrolysis of Adenosine Triphosphate by Cell Fractions of *Bacillus megaterium.* I. Localization and General Characteristics of the Enzymic Activities, 847
—. See *Greenawalt, Weibull, and Löw,* 853
Weil, Alice. See *Saz and Weil,* 2053
Wein, John. See *Deitrich, Hellerman, and Wein,* 560
Weinstein, Ira. See *Heimberg, Weinstein, Dishmon, and Dunkerley,* 3623
Weissbach, Arthur, and **David Korn.** The Effect of Lysogenic Induction on the Deoxyribonucleases of *Escherichia coli* K12λ, PC3312
Weissbach, Herbert, Betty G. Redfield, and **Alan Peterkofsky.** Biosynthesis of the B_{12} Coenzyme: Requirements for Release of Cyanide and Spectral Changes, 3217
—. See *Katz and Weissbach,* 882
—. See *Lovenberg, Weissbach, and Udenfriend,* 89
—. See *Renson, Weissbach, and Udenfriend,* 2261
Weliky, Irving, and **Lewis L. Engel.** The Conversion *in Vitro* of 17-Hydroxpregnenolone to Cortisol by a Human Adrenal Tumor, 2089
Welty, J. D., W. O. Read, and **E. H. Shaw, Jr.** Isolation of 2-Hydroxyethanesulfonic Acid (Isethionic Acid) from Dog Heart, 1160
—. See *Read and Welty,* 1521
Werbin, Harold, I. L. Chaikoff, and **Miles R. Imada.** 5α-Cholestan-3β-ol: Its Distribution in Tissues and Its Synthesis from Cholesterol in the Guinea Pig, 2072
Westheimer, F. H. See *Singh, Thornton, and Westheimer,* PC3006
Westley, John, and **Tokumasa Nakamoto.** Mechanism of Rhodanese Action: Isotopic Tracer Studies, 547
Westphal, Ulrich, and **Billy D. Ashley.** Steroid-Protein Interactions. VIII. Structure of Δ^4-3-Ketosteroids in Relation to Spectrophotometric Interaction with Human Serum Albumin, 2763
Wharton, David C. See *Beinert, Griffiths, Wharton, and Sands,* 2337
Wherrett, John R. See *Tower, Peters, and Wherrett,* 1861
White, David C., and **Lucile Smith.** Hematin Enzymes of *Hemophilus parainfluenzae,* 1332
—. See *Smith and White,* 1337
Whiteley, H. R., and **F. M. Huennekens.** Mechanism of the Reaction Catalyzed by the Formate-activating Enzyme from *Micrococcus aerogenes,* 1290
—. See *Hoskins, Whiteley, and Mackler,* 2647
Whitfeld, Paul R. Identification of End Groups in Tobacco Mosaic Virus Ribonucleic Acid by Enzymatic Hydrolysis, 2865
Whitney, Philip L., and **Charles Tanford.** Solubility of Amino Acids in Aqueous Urea Solutions and its Implications for the Denaturation of Proteins by Urea, PC1735
Wilken, JoAnne. See *Hansen, Wood, Peeters, Jacobson, and Wilken,* 1034
Williams, Charles H., Jr., and **Henry Kamin.** Microsomal Triphosphopyridine Nucleotide-Cytochrome *c* Reductase of Liver, 587
Williams, Harry L. See *Lyon, Bain, and Williams,* 1989
Williams, J. W., and **D. D. Donermeyer.** The Interaction of Bovine Serum Albumin and Its Chicken Antibodies, 2123
Williams, Marjorie K. See *Lowy, Williams, and London,* 1622
Williams-Ashman, H. G. See *Jarabak, Adams, Williams-Ashman, and Talalay,* 345
—. See *Liao, Dulaney, and Williams-Ashman,* 2981
Willis, J. E., and **H. J. Sallach.** Evidence for a Mammalian D-Glyceric Dehydrogenase, 910
Wilson, D. Wright, and **Helene C. Wilson.** Studies *in Vitro* of the Digestion and Absorption of Purine Ribonucleotides by the Intestine, 1643
Wilson, David F. See *King, Howard, Wilson, and Li,* 2941
Wilson, Edith M., and **Esmond E. Snell.** Metabolism of α-Methylserine. I. α-Methylserine Hydroxymethyltransferase, 3171
—, and —. Metabolism of α-Methylserine. II. Stereospecificity of α-Methylserine Hydroxymethyltransferase, 3180
Wilson, Helene C. See *Wilson and Wilson,* 1643
Wilson, Irwin B., and **J. Alexander.** Acetylcholinesterase: Reversible Inhibitors, Substrate Inhibition, 1323
—. See **Kitz and Wilson,** 3245
Wilson, Margaret. See *Richert, Amberg, and Wilson,* 99
Wilt, Fred H. See Naito and Wilt, 3060
Winzler, Richard J. See *Kohn, Winzler, and Hoffmann,* 304
Wise, C. David. See *Drabkin and Wise,* PC261
Wise, James B., and **Albert L. Lehninger.** The Stability of Mitochondrial D-β-Hydroxybutyric Dehydrogenase and its Relationship to the Respiratory Chain, 1363
Witkop, Bernhard. See *Gross and Witkop,* 1856
Witonsky, P., and **S. Kirkwood.** Enzyme Systems Concerned with the Synthesis of Monoiodotyrosine. IV. Further Studies on the Particulate System, 2892
Wittreich, Paul E. See *Asano, Brodie, Wagner, Witterich, and Folkers,* PC2411
Wolfe, R. S. See *Twarog and Wolfe,* 2474
—. See *Valentine, Bojanowski, Gaudy, and Wolfe,* 2271
Wolff, Edith Clarke, E. W. Schirmer, and **J. E. Folk.** The Kinetics of Carboxypeptidase B Activity. I. Kinetic Parameters, 3094
—. See *Folk, Wolff, and Schirmer,* 3100
—. See *Folk, Wolff, Schirmer, and Cornfield,* 3105
Wolff, J. The Effect of Thyroxine on Isolated Dehydrogenases. II. Sedimentation Changes in Glutamic Dehydrogenase, 230
—. The Effect of Thyroxine on Isolated Dehydrogenases. III. The Site of Action of Thyroxine on Glutamic Dehydrogenase, the Function of Adenine and Guanine Nucleotides, and the Relation of Kinetic to Sedimentation Changes, 236
Wolff, John B. Ergothionase from *Escherichia coli,* 874
Wood, Harland G. See *Hansen, Wood, Peeters, Jacobson, and Wilken,* 1034
—. See *Rose, Kellermeyer, Stjernholm, and Wood,* 3325

Wood, Harland G. See *Siu and Wood*, 3044

Wood, W. A. See *Anderson and Wood*, 296, 1029

Wu, Pei-Hsing Lin, Thomas Griffith, and **Richard U. Byerrum.** Synthesis of Pyrrolidine Ring of Nicotine from Several C^{14}-labeled Metabolites by *Nicotiana rustica*, 887

Wyman, Jeffries, Jr. See *Antonini, Wyman, Rossi-Fanelli, and Caputo*, 2773

Wynn, James, and **Robert Gibbs.** Thyroxine Degradation. II. Products of Thyrosine Degradation by Rat Liver Microsomes, 3499

—, —, and **Betty Royster.** Thyroxine Degradation. I. Study of Optimal Reaction Conditions of a Rat Liver Thyroxine-degrading System, 1892

Y

Yagi, Koichi, and **Ryo Mase.** Coupled Reaction of Creatine Kinase and Myosin A-Adenosine Triphosphatase, 397

Yamada, Hideaki, and **Kerry T. Yasunobu.** Monoamine Oxidase. I. Purification, Crystallization, and Properties of Plasma Monoamine Oxidase, 1511

—, and —. Monoamine Oxidase. II. Copper, One of the Prosthetic Groups of Plasma Monoamine Oxidase, 3077

Yamamoto, Shozo. See *Katagiri, Yamamoto, and Hayaishi*, PC2413

Yamano, T. See *Hashimoto, Yamano, and Mason*, PC3843

Yamazaki, I. The Reduction of Cytochrome *c* by Enzyme-generated Ascorbic Free Radical, 224

Yanofsky, Charles. See *Carlton and Yanofsky*, 1531

Yanofsky, Charles. See *Henning, Helinski, Chao, and Yanofsky*, 1523

Yasunobu, Kerry T. See *Ebata and Yasunobu*, 1086

—. See *Yamada and Yasunobu*, 1511, 3077

Yielding, K. Lemone. See *Kimberg and Yielding*, 3233

—. See *Tomkins, Yielding, and Curran*, 1704

Yokoyama, H., T. O. M. Nakayama, and **C. O. Chichester.** Biosynthesis of β-Carotene by Cell-free Extracts of *Phycomyces blakesleeanus*, 681

Yonetani, Takashi. Studies on Cytochrome Oxidase. IV. The Cytochrome Oxidase Activity, 550

York, J. Lyndal. See *Caughey and York*, PC2414

Yoshimura, Junko. See *Tonomura, Kitagawa, and Yoshimura*, 3660

Younathan, Ezzat S. Inhibition of the Citric Acid Cycle by Alloxan, 608

Young, Bobby G. See *Mora and Young*, 1870

—. See *Mora, Young, and Rizvi*, 157

Young, D. Michael, William F. Harrington, and **W. Wayne Kielley.** The Dissociation and Reassociation of the Subunit Polypeptide Chains of Myosin, 3116

Yunis, Adel A., Edmond H. Fischer, and **Edwin G. Krebs.** Comparative Studies on Glycogen Phosphorylase. IV. Purification and Properties of Rabbit Heart Phosphorylase, 2809

—, and **Edwin G. Krebs.** Comparative Studies on Glycogen Phosphorylase II. Immunological Studies on Rabbit and Human Skeletal Muscle Phosphorylase, 34

—. See *Hughes, Yunis, Krebs, and Fischer*, 40

Z

Zabin, Irving, Adam Kepes, and **Jacques Monod.** Thiogalactoside Transacetylase, 253

—. See *Fujino and Zabin*, 2069

Zalkin, H., A. L. Tappel, K. A. Caldwell, S. Shibko, I. D. Desai, and **T. A. Holliday.** Increased Lysosomal Enzymes in Muscular Dystrophy of Vitamin E-deficient Rabbits, 2678

Zamenhof, Stephen. See *Rosenberg and Zamenhof*, 1040

Zannoni, Vincent G. The Tyrosine Oxidation System of Liver. V. The Ability of Various Quinones to Reactivate Inhibited *p*-Hydroxyphenylpyruvic Acid Oxidase, 1172

—, **G. A. Jacoby, S. E. Malawista,** and **Bert N. La Du.** The Effect of Folic Acid on Tyrosine Metabolism in Guinea Pigs, 3506

Zeller, E. Albert, and **Satyapriya Sarkar.** Amine Oxidases. XIX. Inhibition of Monoamine Oxidase by Phenylcyclopropylamines and Iproniazid, 2333

Zenker, Nicolas. See *Jorgensen, Lehman, Greenberg, and Zenker*, 3832

Zewe, Virginia, and **Herbert J. Fromm.** Kinetic Studies of Rabbit Muscle Lactate Dehydrogenase, 1668

—. See *Fromm and Zewe*, 1661, 3027

Zilliken, Friedrich. See *Glick, Chen, and Zilliken*, 981

Zilversmit, D. B. See *Newman and Zilversmit*, 2078

Zimmerman, Steven B., S. R. Kornberg, and **Arthur Kornberg.** Glucosylation of Deoxyribonucleic Acid. II. α-Glucosyl Transferases from T2- and T6-infected *Escherichia coli*, 512

Zumoff, Barnett. See *Fishman, Brown, Hellman, Zumoff, and Gallagher*, 1489

Subject Index

A

Absorption spectra: Changes, ribonuclease-S system, *Richards and Logue*, 3693

Acetate: -1-C^{14}; origin, carbon atoms, steroid hormones, bovine adrenal, corticosteroid degradation, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085

Ethanol, pyruvate, butyrate and, metabolism, "drinker" and "nondrinker" rats, *Segovia-Riquelme, Campos, Solodkowska, González, Alvarado, and Mardones*, 2038

Metabolism, cell-free preparations, spinach leaves, *Mudd and McManus*, 2057

p-Nitrophenyl. *See* *p*-Nitrophenyl acetate

Acetoacetyl coenzyme A: *See under* Coenzyme A

Acetobacter acetigenum: Cellulose synthesis, lactate-buffered medium, formation of D-glucose, cellobiose, other saccharides, *Ramamurti and Jackson*, 2434

Acetyl adenylates: *See under* Adenylates

Acetyl phosphate: Adenosine triphosphate synthesis, carbamyl phosphate synthetase, *Novoa and Grisolia*, PC2710

Acetylation: Reversible; mitochondria, carnitine, intermediary metabolism, *Bremer*, 2228

Acetylcholinesterase: Methanesulfonic acid esters as irreversible inhibitors, *Kitz and Wilson*, 3245

Reversible inhibitors, substrate inhibition, *Wilson and Alexander*, 1323

Acetyl coenzyme A carboxylase: Fatty acid synthesis mechanism, studies, *Waite and Wakil*, 2750

Acetylglucosaminylribitol: *N*-; linkages, teichoic acids, *Staphylococcus aureus* strains, enzymatic synthesis and immunochemistry, *Nathenson and Strominger*, PC3839

Acetylneuraminic acid: Cytidine 5′-monophospho-*N*-; biosynthesis, enzyme, *Neisseria meningitidis, Warren and Blacklow*, 3527

Acetylneuraminic aldolase: *N*-; animal, distribution, properties, sialic acids, *Brunetti, Jourdian, and Roseman*, 2447

Acetylneuraminic aldolase—*Continued*

Acid(s): *N*-Acetylneuraminic. *See* *N*-Acetylneuraminic acid

Adenylic. *See* Adenylic acid

Adenylosuccinic. *See* Adenylosuccinic acid

Alginic. *See* Alginic acid

Amino. *See* Amino acid(s)

Aminoadipic. *See* Aminoadipic acid

Ascorbic. *See* Ascorbic acid

Bile. *See* Bile acids

Carboxylic. *See* Carboxylic acid(s)

Carolic. *See* Carolic acid

Carlosic. *See* Carlosic acid

Deoxyribonucleic. *See* Deoxyribonucleic acid

Diaminopimelic. *See* Diaminopimelic acid

Digalacturonic. *See* Digalacturonic acid

Dihydrolipoic. *See* Dihydrolipoic acid

Dihydroxy-5β-cholanic. *See* Dihydroxy-5β-cholanic acid

Fatty. *See* Fatty acid(s)

Fluoromalic. *See* Fluoromalic acid

Folic. *See* Folic acid

Gluconic. *See* Gluconic acid

Glutamic. *See* Glutamic acid

Glutaric. *See* Glutaric acid

Hyaluronic. *See* Hyaluronic acid

Hydroxy. *See* Hydroxy acid(s)

Hydroxyanthranilic. *See* Hydroxyanthranilic acid

Hydroxyaspergillic. *See* Hydroxyaspergillic acid

Hydroxycinnamic. *See* Hydroxycinnamic acid(s)

2-Hydroxyethanesulfonic. *See* Hydroxyethanesulfonic acid

Hydroxyglutamic. *See* Hydroxyglutamic acid

Hydroxystearic. *See* Hydroxystearic acids

-Induced insulin transformation products, separation and characterization, paper electrophoresis, 7 M urea, *Sundby*, 3406

5′-Inosinic. *See* Inosinic acid

Isethionic. *See* Isethionic acid

Isocitric. *See* Isocitric acid

Isomerization, human mercaptalbumin, moving boundary electrophoresis behavior, *Clark, Rachinsky, and Foster*, 2509

Acid(s)—*Continued*

Ketogulonic. *See* Ketogulonic acid

Kynurenic. *See* Kynurenic acid

Lactobionic. *See* Lactobionic acid

Lysophosphatidic. *See* Lysophosphatidic acid

Methanesulfonic. *See* Methanesulfonic acid

Methylbarbituric. *See* Methylbarbituric acid

Methylenetetrahydrofolic. *See* Methylenetetrahydrofolic acid

Methylstearic. *See* Methylstearic acid

Mevalonic. *See* Mevalonic acid

Nicotinic. *See* Nicotinic acid

Nucleic. *See* Nucleic acid(s)

Oleanolic. *See* Oleanolic acid

Oleic. *See* Oleic acid

Penicillic. *See* Penicillic acid

Performic. *See* Performic acid

Phosphatidic. *See* Phosphatidic acid

Pipecolic. *See* Pipecolic acid

Piperideine-6-carboxylic. *See* Piperideine-6-carboxylic acid

Polycarboxylic. *See* Polycarboxylic acid

Polyriboguanylic. *See* Polyriboguanylic acid

Propionic. *See* Propionic acid

Pyrroline-5-carboxylic. *See* Pyrroline-5-carboxylic acid

Quinaldic. *See* Quinaldic acid

Ribonucleic. *See* Ribonucleic acid

Salicylic. *See* Salicylic acid

Sialic. *See* Sialic acid(s)

Teichoic. *See* Teichoic acid

Tetronic. *See* Tetronic acid

Thymidylic. *See* Thymidylic acid

Titration; behavior, human mercaptalbumin, re-examination, changes, amphoteric properties, N–F transformation, *Foster and Clark*, 3163

Tricarboxylic. *See* Tricarboxylic acid

Uronic. *See* Uronic acid

Vitamin A. *See* Vitamin A acid

Xanthurenic. *See* Xanthurenic acid

Actin: F-; myosin A binding, *Tonomura, Tokura, and Sekiya*, 1074

Globular, adenosine triphosphate

Actin—*Continued*
binding to, requirements, *Strohman and Samorodin*, 363
Partially polymerized solutions, ultracentrifugal analysis, studies on actin, *Martonosi*, 2795
Studies, ultracentrifugal analysis, partially polymerized actin solutions, *Martonosi*, 2795
Tropomyosin content, effect, extraction temperature, *Drabikowski and Gergely*, 3412
Actinocin: Hydroxyanthranilic acid conversion to, *Katz and Weissbach*, 882
Actinomycete(s): Antibiotics, *Kaneda, Butte, Taubman, and Corcoran*, 322
Actinomycin: Chromophore, biosynthesis, *Katz and Weissbach*, 882
Hydroxyproline and ketoproline precursors, *Katz, Prockop, and Udenfriend*, 1585
Actomyosin: Adenosine triphosphate, interaction, low ionic strength, clearing, superprecipitation, adenosine triphosphatase, birefringence, flow studies, *Maruyama and Gergely*, 1100
—, —, —, dissociation during clear phase, *Maruyama and Gergely*, 1095
Adenine(s): Deficiency, histidine biosynthesis, defect, *Shedlovsky and Magasanik*, 3725
-Histidine, relationship, *Escherichia coli*, enzymatic basis, *Shedlovsky and Magasanik*, 3731
2-Substituted, xanthine oxidase action, *Scott and Brown*, 3215
Ureide carbon, utilization, riboflavin biosynthesis, *Eremothecium ashbyii, Smith, Connelly, and Smead*, 3207
Adenine nucleotide(s): Function, *Wolff*, 236
Adenosine: Insulin-like actions, and ribonucleic acid and adenylic acid, *Dole*, 2758
Adenosine-5′-aldehyde: Nucleoside, coenzyme B_{12}, identification, *Hogenkamp, Ladd, and Barker*, 1950
Adenosine diphosphate: Diethylstilbestrol and, pyridine nucleotide coenzyme binding, glutamic dehydrogenase, *Tomkins, Yielding, and Curran*, 1704
Nuclear magnetic resonance spectra, *Cohn and Hughes*, 176
Supplements to pigeon heart mitochondria, activation and inhibition

Adenosine diphosphate—*Continued*
of succinate oxidation, *Chance and Hagihara*, 3540
Adenosine diphosphate glucose: Enzymatic synthesis, glucose 1-phosphate and adenosine triphosphate, *Espada*, 3577
Adenosine 3′,5′-phosphate: Effect, phosphofructokinase, *Fasciola hepatica, Mansour and Mansour*, 629
Formation, catecholamines, choline esters, effect on, cardiac muscle and liver preparations, adenyl cyclase, *Murad, Chi, Rall, and Sutherland*, 1233
—, neurohormones, effects on, brain, other tissue preparations, adenyl cyclase, *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239
In biological materials, human urine, cyclic 3′,5′-nucleotide phosphodiesterase purification, properties, use, *Butcher and Sutherland*, 1244
Inorganic pyrophosphate and, formation, adenosine triphosphate, adenyl cyclase, *Rall and Sutherland*, 1228
Adenosine-5′-phosphosulfate: Sulfate reduction, *Desulfovibrio desulfuricans, Peck*, 198
Adenosine triphosphatase: Activity, cardiac myosin A, role of solvent-induced changes, *Brahms and Kay*, 3449
—, rat brain mitochondria, *Tanaka and Abood*, 2999
Flow studies, birefringence, clearing and superprecipitation, actomyosin, interaction, adenosine triphosphate, low ionic strength, *Maruyama and Gergely*, 1100
Light-dependent, chloroplasts, *Avron*, 2011
Myosin; active site, localization, one sulfhydryl group, *Sekine, Barnett, and Kielley*, 2769
Myosin A-; and creatine kinase, coupled reaction, *Yagi and Mase*, 397
— -; initial phase, possible phosphorylation of myosin A, *Tonomura, Kitagawa, and Yoshimura*, 3660
Adenosine triphosphate: Actomyosin, interaction, low ionic strength, clearing, superprecipitation, adenosine triphosphatase, birefringence, flow studies, *Maruyama and Gergely*, 1100
—, —, —, dissociation during clear

Adenosine triphosphate—*Continued*
phase, *Maruyama and Gergely*, 1095
Adenosine 3′,5′-phosphate and, inorganic pyrophosphate formation from, adenyl cyclase, *Rall and Sutherland*, 1228
Binding to globular actin, requirements, *Strohman and Samorodin*, 363
Formation, action spectra and quantum requirement, spinach chloroplasts, *Black, Turner, Gibbs, Krogmann, and Gordon*, 580
—, effect, light intensity, spinach chloroplasts, *Turner, Black, and Gibbs*, 577
Glucose 1-phosphate and, enzymatic synthesis, adenosine diphosphate glucose, *Espada*, 3577
Hepatic phosphorylase and, levels, ethionine-treated rats, *Shull*, PC1734
Hydrolysis, *Bacillus megaterium* cell fractions, localization and characteristics, enzymic activities, *Weibull, Greenawalt, and Löw*, 847
—, —, stimulation and inhibition, enzymic activities, *Greenawalt, Weibull, and Löw*, 853
Lysophosphatidic acid, biosynthesis, *Pieringer and Hokin*, 653
Nuclear magnetic resonance spectra, *Cohn and Hughes*, 176
Polyribonucleotide formation, thymus nuclei enzyme, polynucleotide nature, *Edmonds and Abrams*, 2636
Synthesis, acetyl phosphate, carbamyl phosphate synthetase, *Novoa and Grisolia*, PC2710
Adenosine triphosphate-adenosine 5′-phosphate transphosphorylase (myokinase): Amino acid composition, *Mahowald, Noltmann, and Kuby*, 1138
Adenosine triphosphate-creatine transphosphorylase: Amino acid composition, *Noltmann, Mahowald, and Kuby*, 1146
Adenosine triphosphate transphosphorylases: Adenosine triphosphate-adenosine 5′-phosphate transphosphorylase (myokinase), amino acid composition, *Mahowald, Noltmann, and Kuby*, 1138
Adenosine triphosphate-creatine transphosphorylase, amino acid composition, *Noltmann, Mahowald, and Kuby*, 1146
Inhibition reactions, *Mahowald, Noltmann, and Kuby*, 1535

Adenosylhomocysteine: *S*-; 5′-Methylthioadenosine and, hydrolytic nucleosidase, *Duerre*, 3737
Adenylates: Acetyl, butyryl, biosynthesis, *Webster and Campagnari*, 1050
Adenyl cyclase: Adenosine triphosphate, adenosine 3′,5′-phosphate and inorganic pyrophosphate formation, *Rall and Sutherland*, 1288
Catecholamine, choline esters, effect, adenosine 3′,5′-phosphate formation, cardiac muscle and liver preparations, *Murad, Chi, Rall, and Sutherland*, 1233
Distribution, preparation, properties, *Sutherland, Rall, and Menon*, 1220
Neurohormone effects, adenosine 3′,5′-phosphate formation, brain, other tissue preparations, *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239
Adenylic acid: 5′-; 5′-inosinic acid and, pyrophosphate biosynthesis, imidazolytic processes, *Alivisatos, La-Mantia, Ungar, and Matijevitch*, 1212
Insulin-like actions, and ribonucleic acid and adenosine, *Dole*, 2758
Adenylosuccinase: Action, adenylosuccinic acid, analogues study, *Hampton*, 529
—, purine biosynthesis, *Miller and Buchanan*, 491
Adenylosuccinic acid: 6-Thio analogues, action adenylosuccinase with, study, *Hampton*, 529
Adipose tissue: Epididymal; normal rats, comparison, fructose and glucose metabolism, fructose metabolism of adipose tissue, *Froesch and Ginsberg*, 3317
Glycerol production and release, *in vitro, Vaughan*, 3354
Homogenates in α-glycerophosphate synthesis and breakdown, *Margolis and Vaughan*, 44
Rat; cortisol effects, glucose metabolism, studies *in vitro, Leboeuf, Renold, and Cahill*, 988
Adrenal(s): Bovine; origin, carbon atoms, steroid hormones, acetate-1-C^{14}, corticosteroid degradation, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085
Human, tumor, conversion, 17-hydroxypregnenolone, cortisol, *Weliky and Engel*, 2089
3β-Hydroxysteroid dehydrogenase activity, C_{17}-hydroxylated Δ^5-pregnenes, C_{21}-hydroxylated Δ^5-pregnenes, *Berliner, Cazes, and Nabors*, 2478
Rat; phosphorylase distribution, influence of adrenocorticotropic hormone *in vivo*, studies in histochemistry, *Greenberg and Glick*, 3552
Adrenal cortex: Bovine; steroid 11β-hydroxylase, preparation, properties, *Sharma, Forchielli, and Dorfman*, 1495
Adrenal tissue: Glucose 6-phosphate dehydrogenase activity, reduced triphosphopyridine nucleotide formation, dehydroepiandrosterone effect, *Tsutsui, Marks, and Reich*, 3009
Adrenocorticotropic hormone. *See under* Hormone(s)
Decarboxylation, 4-hydroxycinnamic acids, hydroxystyrene formation, enzyme reactions, phenolic compounds, *Finkle, Lewis, Corse, and Lundin*, 2926
Aerotobacter aerogenes: D-Mannitol 1-phosphate dehydrogenase, D-sorbitol 6-phosphate dehydrogenase in, *Liss, Horwitz, and Kaplan*, 1342
Xylose and lyxose, degradation pathway, *Anderson and Wood*, 296
Agaricus bisporus: Enzymatic synthesis, citrulline, L-glutamine role, carbamyl nitrogen donor, *Levenberg*, 2590
Alanine: L-; enzymatic addition, and D-glutamic acid, L-lysine, enzymatic synthesis, peptide, bacterial uridine nucleotides, *Ito and Strominger*, 2689
-Acceptor ribonucleic acids; purification, yeast, *Apgar, Holley, and Merrill*, 796
D-Alanyl-D-; enzymatic addition, uridine nucleotide-peptide, *Comb*, 1601
— -; enzymatic synthesis, kinetic studies, D-alanyl-D-alanine synthetase, *Neuhaus*, 3128
—; —, purification and properties, D-alanyl-D-alanine synthetase, *Neuhaus*, 778
—; enzymatic synthesis and addition, enzymatic synthesis, peptide, bacterial uridine nucleotides, *Ito and Strominger*, 2696
β-Cyano-L-; isolation and identification, *Vicia sativa, Ressler*, 733
—; neurolathyrism, possible factor in, *Ressler*, 733
λ-L-Glutamyl-β-; isolation, iris bulbs, *Morris, Thompson, Asen, and Irreverre*, 2180
Glyoxylate and, λ-hydroxyglutamate conversion, purification, properties, enzyme system, *Dekker and Maitra*, 2218
Production rate, insulin digestion with trypsin, *Carpenter and Baum*, 409
Alanine synthetase: D-Alanyl-D-; kinetic studies, enzymatic synthesis of D-alanyl-D-alanine, *Neuhaus*, 3128
—; purification and properties, *Neuhaus*, 778
Albumin: Bovine plasma; specific binding, pyridoxal 5′-phosphate, *Dempsey and Christensen*, 1113
Bovine serum; interaction, chicken antibodies, *Williams and Donermeyer*, 2123
—; naphthol, interaction with, *Belman and Troll*, 746
Human serum; Δ^4-3-ketosteroid structure, spectrophotometric interaction, steroid-protein interactions, *Westphal and Ashley*, 2763
Plasma; isolation and amino acid composition, *Allerton, Elwyn, Edsall, and Spahr*, 85
—; resolution, oligomeric and isomeric forms, zone electrophoresis, polyacrylamide gel, *Sogami and Foster*, 2514
Serum; pepsin, enzyme-substrate complex between, electrophoretic demonstration, *Cann*, 707
—; rat, biosynthesis, amino acid composition, *Peters*, 2182
—; —, —, intracellular phenomena, secretion, *Peters*, 1186
—; —, —, properties, occurrence, liver cell fractions, *Peters*, 1181
—; tyrosyls, solvent perturbation, location, chromophoric residues, *Herskovits and Laskowski*, 2481
Alcohol(s): Allyl. *See* Allyl alcohol
Diethyl ether and, competitive inhibition by, α-chymotrypsin, *Miles, Morey, Crain, Gross, San Julian, and Canady*, 1319
Effects, peptidase and esterase activities, kinetic models, kinetics of carboxypeptidase B activity, *Folk, Wolff, Schirmer, and Cornfield*, 3105
Aldehyde: Vitamin A. *See* Vitamin A aldehyde
Aldehyde dehydrogenase: Diphosphopyridine nucleotide-linked; specificity and *sigma-rho* function, *Deitrich, Heilerman, and Wein*, 560

Aldehyde dehydrogenase—*Continued*
Rabbit liver; steroid hormone mechanism, *Maxwell*, 1699
Aldehyde oxidase: Hepatic, purification and properties, *Rajagopalan, Fridovich, and Handler*, 922
Aldolase: Acetylneuraminic. *See* Acetylneuraminic aldolase
Deoxyribose phosphate. *See* Deoxyribose phosphate aldolase
γ-Methyl-γ-hydroxy-α-ketoglutaric. *See* Methyl-γ-hydroxy-α-ketoglutaric aldolase
Yeast, preparation, properties, *Vanderheiden, Meinhart, Dodson, and Krebs*, 2095
Alginic acid: Metabolism, bacteria, enzymatic formation, unsaturated oligosaccharides and 4-deoxy-L-*erythro*-5-hexoseulose uronic acid, *Preiss and Ashwell*, 309
—,—,— reduction, 4-deoxy-L-*erythro*-5-hexoseulose uronic acid to 2-keto-3-deoxy-D-gluconic acid, *Preiss and Ashwell*, 317
Alicyclic ethers: Aliphatic and aromatic ethers and, 3,5-diiodotyrosine, rat, antigoitrogenic, calorigenic, and hypocholesteremic activities, thyroxine analogues, *Jorgensen, Lehman, Greenberg, and Zenker*, 3832
Aliphatic ethers: Alicyclic and aromatic ethers and, 3,5-diiodotyrosine, rat, antigoitrogenic, calorigenic, and hypocholesteremic acitivites, thyroxine analogues, *Jorgensen, Lehman, Greenberg, and Zenker*, 3832
Allantoin: Fermentation mechanism, *Valentine, Bojanowski, Gaudy, and Wolfe*, 2271
Alloxan: Inhibition, citric acid cycle, *Younathan*, 608
Allyl alcohol: Formation, steroid reduction, *Ringold, Ramachandran, and Forchielli*, PC260
Altitude(s): High; wild Peruvian rodents, tissues, myoglobin levels, *Reynafarje and Morrison*, 2861
Amide(s): Content, insulin fractions, *Carpenter and Chrambach*, 404
Substituted; ultraviolet spectra, solvent and conformational effects, *Glazer and Rosenheck*, 3674
Amine(s): Phenolic, human urine, *Kakimoto and Armstrong*, 208
Role, bacteriophage inactivation, *Mora, Young, and Rizvi*, 157
Amine oxidases: Monoamine oxidase inhibition, phenylcyclopropylamines, iproniazid, *Zeller and Sarkar*, 2333
Amino acid(s): Aromatic; copolymers, ribonuclease inhibition, *Sela*, 418
—; uptake, rat brain *in vivo*, study, *Guroff and Udenfriend*, 803
Carboxyl-terminal; rabbit γ-globulin, *Silman, Cebra, and Givol*, 2196
Collagen, new, 3-hydroxyproline, *Ogle, Arlinghaus, and Logan*, 3667
Composition, adenosine triphosphate-adenosine 5′-phosphate transphosphorylase (myokinase), *Mahowald, Noltmann, and Kuby*, 1138
—, adenosine triphosphate-creatine transphosphorylase, *Noltmann, Mahowald, and Kuby*, 1146
—, chymotryptic peptides, horse heart cytochrome *c*, *Margoliash and Smith*, 2151
—, horse heart cytochrome *c*, *Margoliash, Kimmel, Hill, and Schmidt*, 2148
—, myokinase, *Mahowald, Noltmann, and Kuby*, 1138
—, normal human urinary mucoprotein, *Maxfield and Stefanye*, 2522
—, plasma albumin, *Allerton, Elwyn, Edsall, and Spahr*, 85
—, rat serum albumin, biosynthesis, *Peters*, 2182
—, separation, α and β chains, human hemoglobin structure, *Hill, Konigsberg, Guidotti, and Craig*, 1549
—, —, tryptic peptides, α and β chains, human hemoglobin, *Guidotti, Hill, and Konigsberg*, 2184
Identification, phosphoglucomutase action, *Ray and Koshland*, 2493
Sequence, chymotryptic peptides, horse heart cytochrome *c*, *Margoliash*, 2161
—, human heart cytochrome *c*, *Matsubara and Smith*, PC3575
—, tryptic peptides, α chain, human hemoglobin, structure, *Konigsberg and Hill*, 2547
Solubility, urea solutions, protein denaturation, *Whitney and Tanford*, PC1735
Terminal, of chymotrypsinogen B and chymotrypsinogen, comparison, *Kassell and Laskowski*, 413
Transfer, across intestine, *Akedo and Christensen*, 113
Transport, dibasic, inhibition, rat kidney, *Rosenberg, Downing, and Segal*, 2265
—, lymph node cells, *Helmreich and Kipnis*, 2582
—, models, renal resorption, resistance, metabolic attack, *Christensen and Jones*, 1203
Amino acid(s)—*Continued*
Uptake, insulin action, *Akedo and Christensen*, 118
Amino acid decarboxylase: L-; aromatic, *Lovenberg, Weissbach, and Udenfriend*, 89
Amino acid oxidase: D-; deficiency in Neurospora mutants, *Ohnishi, Macleod, and Horowitz*, 138
—; specificity, glycine oxidase activity, relation, *Neims and Hellerman*, PC976
Aminoadipic acid: α-; glutamic acid and, pipecolic acid metabolism, *Pseudomonas, Rao and Rodwell*, 2232
—; metabolic conversion, pipecolic acid, *Rothstein, Cooksey, and Greenberg*, 2828
Aminoadipic acid-δ-semialdehyde: α-; Δ^1-piperideine-6-carboxylic acid and, pipecolic acid metabolism, *Pseudomonas, Basso, Rao, and Rodwell*, 2239
Amino-enzyme: Formation, partial reactions, histidase action, *Peterkofsky*, 787
Aminoethanol: Labeled, metabolism, *Klain and Johnson*, 123
Aminohydrolase: 2′-deoxyribosyl 4-aminopyrimidone-2,5′-phosphate. *See* 2′-Deoxyribosyl 4-aminopyrimidone-2,5′-phosphate aminohydrolase
Aminohydrolysis: Enzymatic; 4-aminopyrimidine deoxyribonucleotides, purification, properties, 2′-deoxyribosyl 4-aminopyrimidone-2,5′-phosphate aminohydrolase, monkey liver, *Scarano, Bonaduce, and De Petrocellis*, 3742
Aminopyrimidine deoxyribonucleotides. *See under* Deoxyribonucleotides
Amino sugar(s): Thymidine diphosphate-; synthesis of thymidine-linked sugars, *Kornfeld and Glaser*, 3052
Ammonia: Fatty acids and, lysine fermentation, cobamide coenzyme-dependent process, *Stadtman*, PC2409
Glutamic acid and, metabolism, brain, liver, metabolic compartments, *Berl, Takagaki, Clarke, and Waelsch*, 2562
Amphoteric properties: Changes, N–F transformation, re-examination of acid titration behavior of human mercaptalbumin, *Foster and Clark*, 3163
Amylase: α-; liver, action mechanism, *Olavarria and Torres*, 1746

Amylase—*Continued*
Glucosyl transfer, starch, dextrins, *Candida* transglucosyl-amylase, *Sawai and Hehre*, 2047
Transglucosyl- (*Candida*); glycosyl transfer, starch, dextrins, *Sawai and Hehre*, 2047
Amyloglucosidase: Glucoside hydrolysis, *Aspergillus niger*, *Pazur and Kleppe*, 1002
Anaerobiosis: Effect, glucose uptake, frog sartorius muscle, tissue permeability studies, *Özand, Narahara, and Cori*, 3037
Analysis: Equlibrium. *See* Equilibrium analysis
Immunochemical. *See* Immunochemical analysis
Kinetic. *See* Kinetic analysis
Ultracentrifugal. *See* Ultracentrifugal analysis
Anhydrase: Carbonic. *See* Carbonic anhydrase
Anhydrovitamin A_2: Rehydrovitamin A_2 and, *Bamji, Cama, and Sundaresan*, 2747
Anion(s): Binding; stabilization, urea denaturation, pancreatic ribonuclease, *Nelson, Hummel, Swenson, and Friedman*, 1575
Anserine: Enzymatic synthesis, skeletal muscle, carnosine *N*-methylation, *McManus*, 1207
Anthranilate oxidase: Benzoate oxidase and; substrate specificities, hydroxylation, aromatic carboxylic acids, *Ichihara, Adachi, Hosokawa, and Takeda*, 2296
Antibiotics: Actinomycete, *Kaneda, Butte, Taubman, and Corcoran*, 322
Antibody(ies): Antigen and; soluble complexes, *Cebra, Givol, and Katchalski*, 751
—; precipitates, papain digestion, *Stelos and Pressman*, 3679
Chicken, bovine serum albumin, interaction, *Williams and Donermeyer*, 2123
Performic acid-oxidized ribonuclease, peptide inhibition of, antigenic structure, studies, *Brown*, 1162
Antigen: Antibody and; soluble complexes, *Cebra, Givol, and Katchalski*, 751
—; precipitates, papain digestion, *Stelos and Pressman*, 3679
Antigoitrogenic activity: Calorigenic and hypocholesteremic activities and, aliphatic, alicyclic, and aromatic ethers of 3,5-diiodotryosine, rat, thyroxine analogues, *Jorgensen, Lehman, Greenberg, and Zenker*, 3832
Antimycin: Effects, cytochrome *b*, electron transfer system studies, *Pumphrey*, 2384
Antiserum: Bacteriophage T2, blocking, polyelectrolytes, *Mora and Young*, 1870
Antitransaminase: Preparation, tyrosine-α-ketoglutarate transaminase induction, purification, rat liver, *Kenney*, 1605
Apatite: Crystals; transphosphorylation, nucleoside di- and triphosphates, *Krane and Glimcher*, 2991
Apocarboxypeptidase: -Substrate complexes, *Coleman and Vallee*, 3430
Aqueous solutions: Carbohydrate-protein reactions, studies, hydrogen-bond formation, *Giles and McKay*, 3388
Arabinokinase: D-; From *Propionibacterium pentosaceum*, purification and properties, *Volk*, 19
Arabinosyluracil: 1-β-D-; nucleoside phosphorylase activity, *Escherichia coli, Tono and Cohen*, 1271
Arginine: Labeled, metabolism, *Klain and Johnson*, 123
Aromatic compounds: Metabolism, higher plants, biosynthesis, dhurrin, cyanogenic glucoside, *Sorghum vulgare, Koukol, Miljanich, and Conn*, 3223
—, —, dihydrocoumarin hydrolase, *Melilotus alba*, purification, properties, *Kosuge and Conn*, 1653
Aromatic ethers: Aliphatic and alicyclic ethers and, 3,5-diiodotyrosine, rat, antigoitrogenic, calorigenic, and hypocholesteremic activities, thyroxine analogues, *Jorgensen, Lehman, Greenberg, and Zenker*, 3832
Ascaris lumbricoides: α-Methylvalerate formation, pathway, *Saz and Weil*, 2053
Ascites cells: *See under* Cell(s)
Ascorbic acid: L-; C^{14}-labeled glucose cycloacetoacetate conversion, *Phaseolus radiatus, Belkhode and Nath*, 1742
Metabolism, β-keto-L-gulonic acid intermediate, *Volk and Larsen*, 2454
Ascorbic acid oxidase: Ceruloplasmin, *Morell, Aisen, and Scheinberg*, 3455
Sulfhydryl groups, accessibility, *Stark and Dawson*, 712
Ascorbic free radical: Cytochrome *c* reduction, *Yamazaki*, 224
Asparagine: Biosynthesis, *Lactobacillus arabinosus*, control by asparagine, enzyme inhibition, repression, *Ravel, Norton, Humphreys, and Shive*, 2845
Control of asparagine biosynthesis, *Lactobacillus arabinosus*, enzyme inhibition, repression, *Ravel, Norton, Humphreys, and Shive*, 2845
Glutamine and, protein-bound, determination, *Tower, Peters, and Wherrett*, 1861
Aspartate: -3-C^{14}; hexose synthesis, liver and muscle, phosphoenolpyruvate source, *Bloom and Foster*, 2744
Aspartic acid 5′-phosphate kinosynthetase: *N*-(5-Amino-1-ribosyl-4-imidazolylcarbonyl)-L-; purine biosynthesis, *Miller and Buchanan*, 485
Aspergillus niger: Glucoside hydrolysis, amyloglucosidase, *Pazur and Kleppe*, 1002
Pyruvate carboxylase, *Bloom and Johnson*, 2718
Autoprothrombin II: Bovine; physicochemical properties, *Harmison and Seegers*, 3074
Auxotrophs: *Escherichia coli*, serine-glycine, metabolite uptake, studies, *Levine and Simmonds*, 3718
Avocado: Enzyme system, fatty acid biosynthesis, *Barron and Stumpf*, PC163

B

Bacillus megaterium: Cell fractions, hydrolysis, adenosine triphosphate, localization and characteristics, enzymic activities, *Weibull, Greenawalt, and Löw*, 847
—, —, —, stimulation and inhibition, enzymic activities, *Greenawalt, Weibull, and Löw*, 853
Bacillus palustris: Polysaccharide depolymerases, inducible, *Torriani and Pappenheimer*, 3
Bacillus subtilis: Catabolic fate of glucose, *Wang and Krackov*, 3614
Bacteria: Alginic acid metabolism, enzymatic formation, unsaturated oligosaccharides and 4-deoxy-L-*erythro*-5-hexoseulose uronic acid, *Preiss and Ashwell*, 309
—, —, reduction, 4-deoxy-L-*erythro*-5-hexoseulose uronic acid, 2-keto-3-deoxy-D-gluconic acid, *Preiss and Ashwell*, 317
Propionic acid; CO_2 fixation enzyme, phosphoenolpyruvic carboxytrans-

Bacteria—*Continued*
phosphorylase, *Siu and Wood*, 3044
Bacteriophage(s): Inactivation with polyanions, *Mora, Young, and Rizvi*, 157
Nucleoside triphosphate content, *Wahl and Kozloff*, 1953
T2; antiserum, blocking, polyelectrolytes, *Mora and Young*, 1870
—; infection, *Escherichia coli*, *Aposhian and Kornberg*, 519
T4; -infected *Escherichia coli*, α- and β-glucosyl transferases, glucosylation, deoxyribonucleic acid, *Josse and Kornberg*, 1968
T6r⁺-infected *Escherichia coli*, deoxyribosyl-synthesizing system extraction from, spermidine, *Cohen and Barner*, PC1376
Bacterium: Gram-negative; D-talomethylose and D-rhamnose isolation, polysaccharide, *Markovitz*, 1767
Bean: Mung. *See* Mung bean
Benzoate oxidase: Anthranilate oxidase and; substrate specificities, hydroxylation, aromatic carboxylic acids, *Ichihara, Adachi, Hosokawa, and Takeda*, 2296
Biguanide: Hypoglycemia-producing; action, oxidative phosphorylation, study, *Falcone, Mao, and Shrago*, 904
Bile acid(s): Formation from cholesterol, *Suld, Staple, and Gurin*, 338
3β-Hydroxylated; synthesis, isolation of 3β,12α-dihydroxy-5β-cholanic acid, feces, bile acids and steroids 123, *Danielsson, Eneroth, Hellström, and Sjövall*, 3657
Steroids and, synthesis, 3β-hydroxylated bile acids, isolation, 3β,12α-dihydroxy-5β-cholanic acid from feces, *Danielsson, Eneroth, Hellström, and Sjövall*, 3657
Bioluminescence: *Renilla reniformis*, studies, 3′,5′-diphosphoadenosine requirement, luminescent reaction, *Cormier*, 2032
Birefringence: Flow studies, adenosine triphosphatase, clearing and superprecipitation, actomyosin, interaction, adenosine triphosphate, low ionic strength, *Maruyama and Gergely*, 1100
Bladder: Rat, naphthol, effect; naphthol-albumin interaction, relation, *Belman and Troll*, 746
Blocking: Reversible, T2 bacteriophage antiserum, polyelectrolytes, *Mora and Young*, 1870
Blood: pH Measurements, buffer standard for, *Semple, Mattock, and Uncles*, 963
D-Serine in, silkworm *Bombyx mori*, other Lepidoptera, *Srinivasan, Corrigan, and Meister*, PC3844
Bohr effect: *See under* Effect(s)
Bombyx mori: Other Lepidoptera and, D-serine in blood, *Srinivasan, Corrigan, and Meister*, PC3844
Bond(s): Δ^7; of dehydrocholesterol, enzymatic reduction, *Kandutsch*, 358
Disulfide; reduction, polyalanyl ribonuclease, *Anfinsen, Sela, and Cooke*, 1825
—; reversible reduction, trypsin and ribonuclease, carboxymethyl cellulose, *Epstein and Anfinsen*, 2175
Hydrogen; formation, studies, reactions, carbohydrates and proteins, aqueous solutions, *Giles and McKay*, 3388
Hydrophobic; contribution, thermal stability, protein conformations, *Scheraga, Némethy, and Steinberg*, 2506
Peptide, nonenzymatic cleavage, methionine residues, bovine pancreatic ribonuclease, *Gross and Witkop*, 1856
Bone: Fragments, collagen biosynthesis *in vitro*, metabolic studies, bone, *Flanagan and Nichols*, 3686
Glucose metabolism, aerobic, *Cohn and Forscher*, 615
Human; powder, equilibration studies, carbonate ion role, *MacGregor and Nordin*, 2704
Matrix; biosynthesis *in vitro*, effects, parathyroid hormone, *Johnston, Diess, and Miner*, 3560
—; —, labeling of hexosamine and collagen, normal bone, *Deiss, Holmes, and Johnston*, 3555
Metabolic studies *in vitro*, collagen biosynthesis, surviving bone fragments, *Flanagan and Nichols*, 3686
Normal; labeling, hexosamine and collagen, bone matrix biosynthesis *in vitro*, *Deiss, Holmes, and Johnston*, 3555
Brain: Ammonia and glutamic acid metabolism, and liver, metabolic compartments, *Berl, Takagaki, Clarke, and Waelsch*, 2562
Carbon dioxide fixation, *Berl, Takagaki, Clarke, and Wealsch*, 2570
Diesterase, hydrolysis, ribonucleoside 2′,3′-cyclic phosphates, *Drummond, Iyer, and Keith*, 3535
Brain—*Continued*
Hexokinase, reaction, kinetic studies, *Fromm and Zewe*, 1661
— activity, *Bennett, Drori, Krech, Rosenzweig, and Abraham*, 1758
Phosphoinositide complex, metabolism, *Brockerhoff and Ballou*, 1764
Preparations, other tissues and, adenosine 3′,5′-phosphate formation from, neurohormone effects, adenyl cyclase, *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239
Rat; acid-soluble phosphates, electroshock effects on, *Minard and Davis*, 1283
—; aromatic amino acid uptake, *Guroff and Udenfriend*, 803
—; homogenates, spingosine configuration, *Fujino and Zabin*, 2069
—; mitochondria, adenosine triphosphatase activity, *Tanaka and Abood*, 2999
—; pyruvate metabolism, *Koeppe and Hahn*, 1026
Buffer: Standard, pH measurements, blood, *Semple, Mattock, and Uncles*, 963
Butyrate: Enzymatic phosphorylation, *Twarog and Wolfe*, 2474
Ethanol, pyruvate, acetate and, metabolism, "drinker" and "nondrinker" rats, *Segovia-Riquelme, Campos, Solodkowska, González, Alvarado, and Mardones*, 2038
Butyryl adenylates: *See under* Adenylates

C

C^{14}: *See under* Carbon
Ca^{++}: Uptake, rat kidney mitochondria, dependence on respiration and phosphorylation, *Vasington and Murphy*, 2670
Caffeine: Biosynthesis, coffee plant, *Anderson and Gibbs*, 1941
Calcium: Release, kidney mitochondria, vitamin D action, *Engstrom and DeLuca*, PC974
Calorigenic activity: Antigoitrogenic and hypocholesteremic activities and, aliphatic, alicyclic, and aromatic ethers of 3,5-diiodotyrosine, rat, thyroxine analogues, *Jorgensen, Lehman, Greenberg, and Zenker*, 3832
Candida tropicalis var. japonica: Transglucosyl-amylase, glucosyl transfer, starch, dextrins, *Sawai and Hehre*, 2047
Candida utilis: Pentose metabolism, diphosphopyridine nucleotide-specific

Candida utilis—*Continued*
polyol dehydrogenase, *Chakravorty, Veiga, Bacila, and Horecker*, 1014
Capsular polysaccharide: *See under* Polysaccharides
Carbamyl: Nitrogen donor, enzymatic synthesis, citrulline, *Agaricus bisporus*, L-glutamine role, *Levenberg*, 2590
Carbamyl phosphate synthetase: Adenosine triphosphate synthesis, acetyl phosphate, *Novoa and Grisolia*, PC2710
Carbohydrate(s): Reactions with proteins, aqueous solutions, studies, hydrogen-bond formation, *Giles and McKay*, 3388
Units, nature, fetuin, *Spiro*, 382
Carbon: Atoms, origin, steroid hormones, bovine adrenal, acetate-1-C^{14}, corticosteroid degradation, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085
Determination, radioactivity, CO_2 transfer to counting tubes without liquid nitrogen, *Van Slyke and Plazin*, 3296
Radioactive; and H^3, relative retention, nucleosides, nucleic acids, *Neurospora, Fink and Fink*, 2889
—; distribution in glycogen from deuterated glycerol-C^{14}, measure of effectiveness of triosephosphate isomerase *in vivo*, *Rose, Kellermeyer, Stjernholm, and Wood*, 3325
—; incorporation into *p*-hydroxymandelonitrile-β-glucose, other phenolic substances, sorghum seedlings, *Gander*, 3229
Ureide; adenine, utilization, riboflavin biosynthesis, *Eremothecium ashbyii, Smith, Connelly, and Smead*, 3207
Carbonate: Ion; role, equilibration studies, human bone powder, *MacGregor and Nordin*, 2704
Carbon dioxide: Assimilation, effect, light intensity, spinach chloroplasts, *Turner, Black, and Gibbs*, 577
Effect, Hill reaction, *Stern and Vennesland*, 596
Fixation, brain, *Berl, Takagaki, Clarke, and Waelsch*, 2570
—, marine invertebrates, main pathway, flatworms, *Hammen and Lum*, 2419
— enzyme; propionic acid bacteria, phosphoenolpyruvic carboxytransphosphorylase, *Siu and Wood*, 3044
Carbon dioxide—*Continued*
-Pyruvate exchange reaction, *Peel*, PC263
Transfer to counting tubes without liquid nitrogen, determination, carbon, radioactivity, *Van Slyke and Plazin*, 3296
Carbonic anhydrase: Bovine; metal binding, catalytic activity, *Lindskog and Malmström*, 1129
Zinc binding and sulfhydryl group, *Rickli and Edsall*, PC258
Carbon tetrachloride: Action, transport and metabolism of triglycerides and fatty acids, isolated perfused rat liver, relationship, etiology of fatty liver, *Heimberg, Weinstein, Dishmon, and Dunkerley*, 3623
Poisoning, mitochondrial function and metal content, *Reynolds, Thiers, and Vallee*, 3546
Carboxylase: Acetyl coenzyme A. *See* Acetyl coenzyme A carboxylase
Propionyl. *See* Propionyl carboxylase
Pyruvate. *See* Pyruvate carboxylase
Carboxylic acid(s): Aromatic; hydroxylation, substrate specificities, anthranilate and benzoate oxidases, *Ichihara, Adachi, Hosokawa, and Takeda*, 2296
Carboxypeptidase(s): Catheptic; studies, *Greenbaum and Sherman*, 1082
Carboxypeptidase A: Studies, binding, competitive inhibitors, *Fujioka and Imahori*, 2804
Carboxypeptidase B: Activity, kinetics, effects, alcohol, peptidase and esterase activities, kinetic models, *Folk, Wolff, Schirmer, and Cornfield*, 3105
—, —, kinetic parameters, *Wolff, Schirmer, and Folk*, 3094
—, —, —, cobalt and cadmium enzymes, *Folk, Wolff, and Schirmer*, 3100
Cadmium; kinetic parameters, *Folk, Wolff, and Schirmer*, 3100
Cobalt; kinetic parameters, *Folk, Wolff, and Schirmer*, 3100
Carboxytransphosphorylase: Phosphoenolpyruvic. *See* Phosphoenolpyruvic carboxytransphosphorylase
Carcinoma: Mammary 256; ascitic form, Walker rat, pyruvate utilization, metabolism, *Hellerman, Reiss, and Gey*, 997
—; — nodules, Walker rat, citrate formation, pyruvate metabolism,
Carcinoma—*Continued*
Reiss, Hellerman, Ambrose, Smith, Gey, and Iber, 992
Carlosic acid: Formation, *Penicillium charlesii, Bentley, Bhate, and Keil*, 859
Carnitine: Fatty acid esters, metabolism, mitochondria, intermediary metabolism, *Bremer*, 3628
Intermediary metabolism, metabolism, fatty acid esters of carnitine, mitochondria, *Bremer*, 3628
—, reversible acetylation, mitochondria, *Bremer*, 2228
Carnosine: Measurement and distribution, rat, *Reddy and Hegsted*, 705
N-Methylation, anserine enzymatic synthesis, skeletal muscle, *McManus*, 1207
Carolic acid: Formation, *Penicillium charlesii, Bentley, Bhate, and Keil*, 859
Carotene: β-; Biosynthesis, *Phycomyces blakesleeanus*, extracts, *Yokoyama, Nakayama, and Chichester*, 681
Cartilage: Bovine costal, protein-polysaccharide synthesis, *Campo and Dziewiatkowski*, 2729
Rat; hydroxyproline formation, *Daughaday and Mariz*, 2831
Catabolism: Tryptophan, intermediates, mammalian liver, *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi*, PC2043
Catalase: -Hydrogen peroxide Complex I hydrogen donors; hydrogen peroxide and, catalase inhibition kinetics, 3-amino-1,2,4-triazole, *Margoliash and Schejter*, 2359
Inhibition, reducing agents in presence of phenazine methosulfate, *Marcus and Feeley*, 221
— kinetics, 3-amino-1,2,4-triazole, hydrogen peroxide, catalase-hydrogen peroxide Complex I hydrogen donors, *Margoliash and Schejter*, 2359
Nature, primary complex, *Chance and Schonbaum*, 2391
Peroxidase and, denaturation, rotatory dispersion study, *Osbahr and Eichhorn*, 1820
Synthesis and destruction *in vivo*, kinetics, *Price, Sterling, Tarantola, Hartley, and Rechcigl*, 3468
Catechol: New metabolic pathway, *Nishizuka, Ichiyama, Nakamura, and Hayaishi*, PC268
Catecholamine(s): Choline esters and, effect, adenosine 3′,5′-phosphate formation, cardiac muscle and liver

Catecholamine(s)—*Continued*
preparations, adenyl cyclase, *Murad, Chi, Rall, and Sutherland,* 1233
Uptake, adrenal medulla, *Kirshner,* 2311
Cell(s): Ascites; nicotinic acid and nicotinamide metabolism, *in vitro, Friedland, Fuller, and Dietrich,* 3829
— tumor; feedback inhibition, purine biosynthesis, *Henderson,* 2631
Ehrlich ascites; diphosphopyridine nucleotidase activity, methylbis-(β-chloroethyl)amine effect, role, glycolysis, *Green and Bodansky,* 1752
-Free *Escherichia coli* preparations, protein synthesis, chloramphenicol effect, *Rendi and Ochoa,* 3711
— preparations, spinach leaves, acetate metabolism, *Mudd and McManus,* 2057
Lymph node; amino acid transport, *Helmreich and Kipnis,* 2582
—; isolated, secretion mechanism, γ-globulins, observations, *Helmreich, Kern, and Eisen,* 1925
Mammalian, deoxyribonucleic acid synthesis, inhibition, *Lieberman and Ove,* 1634
Vitamin B_{12}-deficient, *Lactobacillus leichmannii,* biosynthesis, thymine and formyltetrahydrofolate, *Roberts and Nichol,* 2278
Wall; synthesis, stability, *Streptococcus faecalis,* hydroxylysine effect, *Smith, Newman, Leach, and Henderson,* 1198
Cellobiose: D-Glucose, other saccharides and, formation, cellulose synthesis, *Acetobacter acetigenum,* lactate-buffered glycerol medium, *Ramamurti and Jackson,* 2434
Cellulose: Carboxymethyl; trypsin and ribonuclease, reversible reduction, disulfide bonds, *Epstein and Anfinsen,* 2175
Synthesis, *Acetobacter acetigenum,* formation of D-glucose, cellobiose, other saccharides, lactate-buffered glycerol medium, *Ramamurti and Jackson,* 2434
Cerebroside(s): Total enzymatic synthesis, studies, *Brady,* PC2416
Ceruloplasmin: Ascorbic acid oxidase, *Morell, Aisen, and Scheinberg,* 3455
Chain(s): α; β and, human hemoglobin, tryptic peptides, separation, amino
Chain(s)—*Continued*
acid composition, *Guidotti, Hill, and Konigsberg,* 2184
—; human hemoglobin, amino acid sequence, tryptic peptides, *Konigsberg and Hill,* 2547
—; —, chymotryptic digestion, *Hill and Konigsberg,* 3151
—; —, digestion with pepsin, *Konigsberg and Hill,* 3157
—; separation, amino acid composition, human hemoglobin structure, *Hill, Konigsberg, Guidotti, and Craig,* 1549
β; separation, amino acid composition, human hemoglobin structure, *Hill, Konigsberg, Guidotti, and Craig,* 1549
—; α and, human hemoglobin, tryptic peptides, separation, amino acid composition, *Guidotti, Hill, and Konigsberg,* 2184
Respiratory. *See* Respiratory chain
Side-; interactions, half-cystine residues, pairing, ribonuclease, *Haber and Anfinsen,* 1839
Charge(s): Surface, erythrocyte, sialic acid contribution, *Eylar, Madoff, Brody, and Oncley,* 1992
Transfer complexes; lipoyl dehydrogenase, free flavins, *Massey and Palmer,* 2347
Chinese individuals: Hemoglobin G, chemical abnormality, *Swenson, Hill, Lehmann, and Jim,* 1517
Chloramphenicol: Effect, protein synthesis, cell-free *Escherichia coli* preparations, *Rendi and Ochoa,* 3711
Chlorophyll: Accumulation, correlation with soluble leaf protein, *Kupke,* 3287
Chloroplast(s): Light-dependent adenosine triphosphatase, *Avron,* 2011
Spinach; triphosphopyridine nucleotide reduction, adenosine triphosphate formation, action spectra and quantum requirement, studies on photosynthetic processes, *Black, Turner, Gibbs, Krogmann, and Gordon,* 580
—; —, —, carbon dioxide assimilation, effect of light intensity, studies on photosynthetic processes, *Turner, Black, and Gibbs,* 577
Cholestane-3α,7α,12α-triol: 5β-; Oxidation, mitochondria, rat liver, *Suld, Staple, and Gurin,* 338
Cholestan-3β-ol: 5α-; distribution in tissues, synthesis, cholesterol,
Cholestan-3β-ol—*Continued*
guinea pig, *Werbin, Chaikoff, and Imada,* 2072
Cholestratrien-3β-ol: $\Delta^{5,7,24}$-; probable structure of sterol, intestinal wall, triparanol-treated guinea pigs, *Frantz, Sanghvi, and Clayton,* 3381
Cholesterol: Bile acid formation from, *Suld, Staple, and Gurin,* 338
Biosynthesis, study, *Popják, Cornforth, Cornforth, Ryhage, and Goodman,* 56
5α-Cholestan-3β-ol synthesis, guinea pig, distribution in tissues, *Werbin, Chaikoff, and Imada,* 2072
Flux, quantitative aspects, rabbit atheromatous lesions, *Newman and Zilversmit,* 2078
Long chain fatty acid esters, hydrolysis, rat liver enzymes, *Deykin and Goodman,* 3649
Metabolism, chick embryo, *Fish, Boyd, and Stokes,* 334
Pregnenolone biosynthesis from, *Shimizu, Gut, and Dorfman,* 699
Choline: Esters, catecholamines and, effect, adenosine 3′,5′-phosphate formation, cardiac muscle and liver preparations, adenyl cyclase, *Murad, Chi, Rall, and Sutherland,* 1233
Phosphatidal. *See* Phosphatidal choline
Choline phosphokinase: Microdetermination, brain tissue, *McCaman,* 672
Chromanyl phosphate: 6-; vitamin $K_{1(20)}$, behavior, enzymatic system, *Mycobacterium phlei, Asano, Brodie, Wagner, Wittreich, and Folkers,* PC2411
Chromatium: RHP, diheme peptide, *Dus, Bartsch, and Kamen,* 3083
Chromatogram(s): Paper; new reagent, peptides, nucleotides, other N—H-containing compounds, detection, *Mazur, Ellis, and Cammarata,* 1619
Chromatography: Partition column; insulin fraction isolation, *Carpenter and Chrambach,* 404
Chromatophores: *Rhodospirillum rubrum,* disulfide photoreduction system, *Newton,* 3282
Chromophore(s): Actinomycin, biosynthesis, *Katz and Weissbach,* 882
Chymopapain: Isolation, crystallization, characterization, *Ebata and Yasunobu,* 1086
Chymotrypsin: α-; competitive inhibition, by diethyl ether, alcohols,

Chymotrypsin—*Continued*
Miles, Morey, Crain, Gross, San Julian, and Canady, 1319
Poly-DL-alanyl; properties, *Epstein, Anfinsen, and Sela,* 3458
Trypsin, plasmin and, inhibition, sheep serum inhibitor, *Martin,* 2099
Two forms, differentiation, urea denaturation rates, *Chervenka,* 2105
Chymotrypsinogen: α-; Chymotrypsinogen B, terminal amino acids, comparison, *Kassell and Laskowski,* 413
B; α-Chymotrypsinogen, terminal amino acids, comparison, *Kassell and Laskowski,* 413
Chymotryptic digest(s): Papain; peptides, oxidized, carboxymethylated, denatured protein, *Light and Smith,* 2537
Chymotryptic digestion: α chain, human hemoglobin, *Hill and Konigsberg,* 3151
Citrate: Formation, ascitic nodules, mammary carcinoma, Walker rat, pyruvate metabolism, *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber,* 992
Citric acid: Cycle, inhibition by alloxan, *Younathan,* 608
Citrulline: Enzymatic synthesis, *Agaricus bisporus,* L-glutamine role, carbamyl nitrogen donor, *Levenberg,* 2590
Clearing: Superprecipitation and, adenosine triphosphatase, birefringence, flow studies, actomyosin, interaction, adenosine triphosphate, low ionic strength, *Maruyama and Gergely,* 1100
Cleavage: Chemical; studies, urinary glucuronosides, ketosteroids, *Jacobsohn and Lieberman,* 1469
Enzymatic; L-fuculose 1-phosphate, L-fucuse metabolism, *Ghalambor and Health,* 2427
Nonenzymatic; peptide bonds, methionine residues, bovine pancreatic ribonuclease, *Gross and Witkop,* 1856
Clostridium perfringens: Polynucleotide phosphorylase, polypeptides, effect, polyribonucleotide synthesis, *Dolin,* 1626
Cobamide coenzyme(s): *See under* Coenzyme(s)
Coenzyme(s): Cobamide; enzymatic synthesis, *Brady, Caslanera, and Barker,* 2325
—; -dependent process, lysine fermentation, fatty acids, ammonia, *Stadtman,* PC2409
Pyridine nucleotide; binding, glutamic dehydrogenase, diethylstilbestrol, adenosine diphosphate, *Tomkins, Yielding, and Curran,* 1704
Vitamin B_{12}; biosynthesis, cyanide release, spectral change requirements, *Weissbach, Redfield, and Peterkofsky,* 3217
Coenzyme A: Acetoacetyl; reduction, reduced triphosphopyridine nucleotide, *Wakil and Bressler,* 687
Fatty acyl; and sarcosine dehydrogenase systems, functional identity, electron-transferring flavoproteins, *Beinert and Frisell,* 2988
Glycolyl; preparation, and *N*-glycolylhexosamines, *N*-glycolylhexosamine 6-phosphate, glycolyl glutathione, sialic acids, *Jourdian and Roseman,* 2442
β-Hydroxy-β-methylglutaryl; diastereoisomers, deacylation, yeast extracts, *Kirtley, Rudney, and Durr,* 1781
Palmityl; monoglyceride esterification, intestinal epithelial subcellular fractions, *Senior and Isselbacher,* 1454
—; phosphatidic acid biosynthesis, *Pieringer and Hokin,* 659
Coenzyme A racemase: Methylmalonyl; propionic acid metabolism, animal tissues *Mazumder, Sasakawa, Kaziro, and Ochoa,* 3065
Coenzyme A reductase: Reduced triphosphopyridine nucleotide-acetoacetyl, *Wakil and Bressler,* 687
Coenzyme B_{12}: Nucleoside, identification, *Hogenkamp, Ladd, and Barker,* 1950
Coenzyme Q: DPNH-; reductase, preparation, properties, electron transfer system studies, *Hatefi, Haavik, and Griffiths,* 1676
Group; new naturally occurring member, tetrahydrocoenzyme Q, *Lavate, Dyer, Springer, and Bentley,* PC2715
Reduced (QH_2); -cytochrome *c* reductase, electron transfer system studies, *Hatefi, Haavik, and Griffiths,* 1681
Cofactor(s): Phenylalanine hydroxylation; structure, *Kaufman,* PC2712
Photophosphorylation, plastoquinone specificity, *Krogmann and Olivero,* 3292
Coffee: Plant, caffeine biosynthesis, *Anderson and Gibbs,* 1941
Coliphage(s): T6; gentiobiose from, deoxyribonucleic acid constituent, *Kuno and Lehman,* 1266
Collagen: Biosynthesis, surviving bone fragments, *in vitro,* metabolic studies, bone, *Flanagan and Nichols,* 3686
Hydroxylysine, formation, *Popenoe and Van Slyke,* 3491
Labeling, normal bone, bone matrix biosynthesis *in vitro, Deiss, Holmes, and Johnston,* 3555
New amino acid, 3-hydroxyproline, *Ogle, Arlinghaus, and Logan,* 3667
Synthesis, intracellular localization studies, chick embryo, *Prockop, Peterkofsky, and Udenfriend,* 1581
Colostrum: Bovine globulin, glycopeptides, isolation and properties, *Nolan and Smith,* 453
Column(s): Partition; separation, nucleic acid degradation products, *Hall,* 2283
Compartment(s): Metabolic; ammonia and glutamic acid metabolism, brain, liver, *Berl, Takaki, Clarke, and Waelsch,* 2562
Complex(es): Brain phosphoinositide, metabolism, *Brockerhoff and Ballou,* 1764
Catalase-hydrogen peroxide I; hydrogen donors, hydrogen peroxide and, catalase inhibition kinetics, 3-amino-1,2,4-triazole, *Margoliash and Schejter,* 2359
Catalase, primary, nature, *Chance and Schonbaum,* 2391
Charge transfer; lipoyl dehydrogenase, free flavins, *Massey and Palmer,* 2347
Enzyme-substrate, electrophoretic demonstration, *Cann,* 707
Formation inhibition, acetyl-L-tryptophan and fatty acids, *Cann,* 707
Pepsin and serum albumin, electrophoretic demonstration, *Cann,* 707
Soluble, antigen, antibody fragments, *Cebra, Givol, and Katchalski,* 751
Configuration: Sphingosine, rat brain homogenates, *Fujino and Zabin,* 2069
Conformation(s): Proteins; thermal stability, hydrophobic bond contribution, *Scheraga, Némethy, and Steinberg,* 2506
Contraction factor: Mitochondrial, assay, cellular distribution, *Neubert, Rose, and Lehninger,* 2025

Control: Feedback inhibition, enzymology, *Gerhart and Pardee,* 891
Copolymer(s): Aromatic amino acids, ribonuclease inhibition, *Sela,* 418
Glutamic acid, ribonuclease inhibition, *Sela,* 418
Copper: Properties, cytochrome oxidase, paramagnetic resonance spectroscopy, *Beinert, Griffiths, Wharton, and Sands,* 2337
Prosthetic groups, plasma monoamine oxidase, *Yamada and Yasunobu,* 3077
Corpus luteum: Steroid hormone formation, ovarian tissue, studies *in vitro, Huang and Perlman,* 1060
Cortex: Adrenal. *See* Adrenal cortex
Renal. *See* Renal cortex
Corticosteroid(s): -Binding globulin, isolation, plasma of diethylstilbestrol-treated men, *Seal and Doe,* 3136
C_{18} oxygenated; identification, human urine, *Ulick and Vetter,* 3364
Degradation, origin, carbon atoms, steroid hormones, bovine adrenal, acetate-1-C^{14}, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid,* 2085
Cortisol: Effects, glucose metabolism, adipose tissue, studies *in vitro, Leboeuf, Renold, and Cahill,* 988
17-Hydroxypregnenolone conversion, human adrenal tumor, *Weliky and Engel,* 2089
Coumarin: Biosynthesis, *Melilotus alba,* **Stoker and Bellis,** 2303
Countercurrent distribution: Insulin fraction isolation, *Carpenter and Chrambach,* 404
Creatine: Synthesis, rate, rat liver, *Gerber, Gerber, Koszalka, and Miller,* 2246
Creatine kinase: Coupled reaction, myosin A-adenosine triphosphatase, *Yagi and Mase,* 397
Creatinine: Reactions, alkaline picrate, *Archibald,* 612
Cyanide: Release requirements, B_{12} coenzyme biosynthesis, *Weissbach, Redfield, and Peterkofsky,* 3217
Cyclase: Adenyl. *See* Adenyl cyclase
Cycle(s): Citric acid, inhibition by alloxan, *Younathan,* 608
Tricarboxylic acid, mechanism, fatty acid synthesis regulation, *Martin and Vagelos,* 1787
Urea; enzymes, effects, fasting, protein-free diets, levels, rat liver, *Schimke,* 1921
Cyclic 3′,5′-nucleotide phosphodiesterase: Purification, properties, use, adenosine 3′,5′-phosphate, in human urine, biological materials, *Butcher and Sutherland,* 1244
Cycloacetoacetate: C^{14}-labeled glucose-; conversion, L-ascorbic acid, *Phaseolus radiatus, Belkhode and Nath,* 1742
Cystamine monosulfoxide: oxidized glutathione, tetrathionate and, interaction, rabbit muscle D-glyceraldehyde 3-phosphate dehydrogenase —SH groups, *Pihl and Lange,* 1356
Cytidine: Conversion to deoxycytidine in the rat, *Thomson, Scotto, and Brown,* 3510
Cytidine diphosphate: Deoxycytidine diphosphate formation from, *Escherichia coli* enzymes, enzymatic synthesis of deoxyribonucleotides, *Reichard,* 3513
Cytidine monophosphate: Phosphorylation, animal tissues, *Mendicino,* 165
Cytochrome(s): *b*-555 and *b*-561; properties, studies, *b*-type cytochrome, mung bean seedlings, *Shichi and Hackett,* 2959
—; purification, studies, *b*-type cytochromes, mung bean seedlings, *Shichi and Hackett,* 2955
b-type; mung bean seedlings, studies, properties, *b*-555 and *b*-561, *Shichi and Hackett,* 2959
—; —, —, purification, *b*-555 and *b*-561, *Shichi and Hackett,* 2955
Liver microsomes, *Omura and Sato,* PC1375
Cytochrome *b*: Antimycin, effects, electron transfer system studies, *Pumphrey,* 2384
Cytochrome b_5 reductase: Microsomal; hydrogen transfer to, from reduced pyridine nucleotides, *Strittmatter,* 3250
Cytochrome *c*: Horse heart; amino acid composition, *Margoliash, Kimmel, Hill, and Schmidt,* 2148
—; chymotryptic peptides, amino acid sequence, *Margoliash,* 2161
—; —, isolation, amino acid composition, *Margoliash and Smith,* 2151
—; interconversion, monomer and polymers, *Margoliash and Lustgarten,* 3397
Human heart; amino acid sequence, *Matsubara and Smith,* PC3575
Inhibition, cytochrome *c* oxidase, *McGuinness and Wainio,* 3273
Cytochrome *c*—*Continued*
Napthol, interaction with, *Belman and Troll,* 746
Reduction, ascorbic free radical, *Yamazaki,* 224
—, xanthine oxidase, competitive inhibition by myoglobin, *Fridovich,* 584
Cytochrome *c* oxidase: Nature of inhibition by cytochrome *c*, *McGuinness and Wainio,* 3273
Cytochrome *c* reductase(s): D-; Yeast, inhibition, *Nygaard,* 742
L-; Yeast, inhibition, *Nygaard,* 742
D-Lactic; yeast, kinetics, integrated velocity equations, *Graae and Nygaard,* 3255
Reduced coenzyme Q (QH_2)-; electron transfer system studies, *Hatefi, Haavik, and Griffiths,* 1681
Reduced nicotinamide adenine dinucleotide-; heart mitochondria, comparison, formation, respiratory chain-linked dehydrogenase, *Watari, Kearney, Singer, Basinski, Hauber, and Lusty,* PC1731
Triphosphopyridine nucleotide-; microsomal; liver, *Williams and Kamin,* 587
Cytochrome oxidase(s): Activity, study, *Yonetani,* 550
Beef heart muscle, green heme, oxidation, properties, *Caughey and York,* PC2414
Copper, properties, paramagnetic resonance spectroscopy, *Beinert, Griffiths, Wharton, and Sands,* 2337
Cytolipin H: Preparation, immunochemical studies, lipids, organ, tumor, *Rapport, Schneider, and Graf,* 1056

D

Deacylation: Diastereoisomers, β-hydroxy-β-methylglutaryl coenzyme A, yeast extracts, *Kirtley, Rudney, and Durr,* 1781
Deaminase: Deoxycytidylate. *See* Deoxycytidylate deaminase.
Decarboxylase: Amino acid. *See* Amino acid decarboxylase
Decarboxylation: Enzymic hydroxylation and; salicylic acid, flavin adenine dinucleotide requirement, *Katagiri, Yamamoto, and Hayaishi,* PC2413
4-Hydroxycinnamic acids, *Aerotobacter,* hydroxystyrene formation, enzyme reactions, phenolic compounds, *Finkle, Lewis, Corse, and Lundin,* 2926

Decomposition: Nonenzymatic; 5-methylbarbituric acid, *Doumas and Biggs*, 2306
Corticosteroids, origin, carbon atoms, steroid hormones, bovine adrenal, acetate-1-C^{14}, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085
Nucleic acid, products, separation, partition columns, *Hall*, 2283
Thyroxine; rat liver microsomes, products, *Wynn and Gibbs*, 3499
—; study, reaction conditions, rat liver thyroxine-degrading system, *Wynn, Gibbs, and Royster*, 1892
Dehydrase: Serine. *See* Serine dehydrase
Threonine. *See* Threonine dehydrase
Dehydrocholesterol: 7-; Δ^7 bond, enzymatic reduction, *Kandutsch*, 358
24-; Localization and turnover, cholesterol metabolism, *Fish, Boyd, and Stokes*, 334
Dehydroepiandrosterone: Effect on glucose 6-phosphate dehydrogenase activity, reduced triphosphopyridine nucleotide formation, adrenal tissue, *Tsutsui, Marks, and Reich*, 3009
Dehydrogenase(s): Aldehyde. *See* Aldehyde dehydrogenase
Dihydrodiphosphopyridine nucleotide. *See* Dihydrodiphosphopyridine nucleotide dehydrogenase
Dihydroorotic. *See* Dihydroorotic dehydrogenase
Dimethylglycine. *See* Dimethylglycine dehydrogenase.
Formaldehyde. *See* Formaldehyde dehydrogenase
Glucose. *See* Glucose dehydrogenase
Glucose 6-phosphate. *See* Glucose 6-phosphate dehydrogenase
Glutamic. *See* Glutamic dehydrogenase.
D-Glyceraldehyde 3-phosphate. *See* D-Glyceraldehyde 3-phosphate dehydrogenase
Glyceric. *See* Glyceric dehydrogenase
D-β-Hydroxybutyric. *See* Hydroxybutyric dehydrogenase
Hydroxybutyric acid. *See* Hydroxybutyric acid dehydrogenase
3β-Hydroxysteroid. *See* Hydroxysteroid dehydrogenase
17β-Hydroxysteroid. *See* Hydroxysteroid dehydrogenase
Dehydrogenase(s)—*Continued*
Isolated; thyroxine effect, sedimentation changes, glutamic dehydrogenase, *Wolff*, 230
—; —, site of thyroxine action on glutamic dehydrogenase, function of adenine and guanine nucleotides, relation of kinetic and sedimentation changes, *Wolff*, 236
Lactate. *See* Lactate dehydrogenase
Lactic. *See* Lactic dehydrogenase
Lipoyl. *See* Lipoyl dehydrogenase
D-Mannitol 1-phosphate. *See* Mannitol 1-phosphate dehydrogenase
5,10 - Methylenetetrahydrofolic *See* Methylenetetrahydrofolic dehydrogenase
Reduced diphosphopyridine nucleotide. *See* Diphosphopyridine nucleotide dehydrogenase
Respiratory chain-linked; reduced nicotinamide adenine dinucleotide-cytochrome *c* reductases, formation, comparison, heart mitochondria, *Watari, Kearney, Singer, Basinski, Hauber, and Lusty*, PC1731
Ribitol. *See* Ribitol dehydrogenase
Sarcosine. *See* Sarcosine dehydrogenase
D-Sorbitol 6-phosphate. *See* D-Sorbitol 6-phosphate dehydrogenase
Polyol. *See* Polyol dehydrogenase
Triosephosphate. *See* Triosephosphate dehydrogenase
Uridine diphosphate-D-glucose. *See* Uridine diphosphate-D-glucose dehydrogenase
Deiodination: Flavin-induced, photodependent, thyroxine, activation, inert proteins, *Morreale de Escobar, Escobar del Rey, and Llorente Rodriguez*, PC2041
Demethylation: Nicotine metabolism, *McKennis, Turnbull, Schwartz, Tamaki, and Bowman*, 541
Denaturation: Catalase and peroxidase, rotatory dispersion study, *Osbahr and Eichhorn*, 1820
Pancreatic ribonuclease, urea, *Nelson and Hummel*, 1567
Protein, urea, amino acid solubility, urea solutions, *Whitney and Tanford*, PC1735
Urea, pancreatic ribonuclease, stabilization, anion binding, *Nelson, Hummel, Swenson, and Friedman*, 1575
—, rates, differentiation, two forms, chymotrypsin, *Chervenka*, 2105
Deoxycytidine: Cytidine conversion to in the rat, *Thomson, Scotto, and Brown*, 3510
Deoxycytidine diphosphate: Formation from cytidine diphosphate, *Escherichia coli* enzymes, enzymatic synthesis of deoxyribonucleotides, *Reichard*, 3513
Deoxycytidine 5′-triphosphate: Deoxythymidine 5′-triphosphate and, regulatory influence, deoxycytidylate deaminase, nucleotide interconversions, *Maley and Maley*, PC3311
Deoxycytidylate: Polymer, enzymatic synthesis, deoxyribonucleic acid, *Radding, Josse, and Kornberg*, 2869
Deoxycytidylate deaminase: Regulatory influence, deoxycytidine 5′-triphosphate and deoxythymidine 5′-triphosphate, nucleotide interconversions, *Maley and Maley*, PC3311
Deoxycytidylate hydroxymethylase: Purification, properties, origin, studies, metabolic function, virus-induced acquisition, *Pizer and Cohen*, 1251
Deoxyguanylate: Polymer, enzymatic synthesis, deoxyribonucleic acid, *Radding, Josse, and Kornberg*, 2869
Deoxynucleotide(s): Polymers, kinetics of primed, synthesis *de novo*, enzymatic synthesis, deoxyribonucleic acid, *Radding and Kornberg*, 2877
Deoxyribonuclease(s): *Escherichia coli*, purification and properties, ribonucleic acid-inhibitable endonuclease, *Lehman, Roussos, and Pratt*, 819
—, ribonucleic acid inhibition, endonuclease, *Lehman, Roussos, and Pratt*, 829
— K12λ, effect of lysogenic induction, *Weissbach and Korn*, PC3312
Streptococcal (streptodornase); deoxyribonucleic acid digestion products, characterization, *Georgatsos, Unterholzner, and Laskowski*, 2626
Deoxyribonucleic acid(s): Action mechanism, micrococcal nuclease, *Sulkowski and Laskowski*, 2620
Characterization, digestion products, streptococcal deoxyribonuclease (streptodornase), *Georgatsos, Unterholzner, and Laskowski*, 2626

Deoxyribonucleic acid(s)—*Continued*
Chromatographic fractionation, *Frankel and Crampton*, 3200
Enzymatic synthesis, kinetics, primed deoxynucleotide polymers, and synthesis *de novo*, *Radding and Kornberg*, 2877
—, polymer, deoxyguanylate and deoxycytidylate, *Radding, Josse, and Kornberg*, 2869
—, polymerase, T2 bacteriophage infection of *Escherichia coli*, *Aposhian and Kornberg*, 519
—, studies, nearest neighbor base sequences, *Swartz, Trautner, and Kornberg*, 1961
Gentiobiose, constituent of, from coliphage T6, *Kuno and Lehman*, 1266
Glucosylation, *Zimmerman, Kornberg, and Kornberg*, 512
—, α- and β-glucosyl transferases, T4-infected *Escherichia coli*, *Josse and Kornberg*, 1968
Phosphorus, rat liver, metabolic stability, *Ives and Barnum*, 2604
Phosphorus-containing precursors, rat liver, radiochemical equilibration, *Ives and Barnum*, 2599
Role in ribonucleic acid synthesis, incorporation, pyrimidine and purine analogues, ribonucleic acid, *Kahan and Hurwitz*, 3778
—, influence on reaction, *Hurwitz, Furth, Anders, and Evans*, 3752
—, purification, properties, ribonucleic acid polymerase, *Furth, Hurwitz, and Anders*, 2611
Synthesis, inhibition in mammalian cells, *Lieberman and Ove*, 1634
Deoxyribonucleotide(s): 4-Aminopyrimidine; enzymatic aminohydrolysis, purification, properties, 2′-deoxyribosyl 4-aminopyrimidone-2,5′-phosphate aminohydrolase, monkey liver, *Scarano, Bonaduce, and De Petrocellis*, 3742
Enzymatic synthesis, deoxycytidine diphosphate formation, cytidine diphosphate, *Escherichia coli* enzymes, *Reichard*, 3513
Deoxyribose phosphate aldolase: rat liver; polycarboxylic acid activation, *Jiang and Groth*, 3339
Deoxyribosyl: Compounds, assay studies, tissue extracts, *Schneider*, 1405
-Synthesizing system, extraction, T6r+-infected *Escherichia coli*, spermidine in, *Cohen and Barner*, PC1376
Deoxyribosyl 4-aminopyrimidone-2,5′-phosphate aminohydrolase: 2′-; monkey liver, purification, properties, enzymatic aminohydrolysis of 4-aminopyrimidine deoxyribonucleotides, *Scarano, Bonaduce, and De Petrocellis*, 3742
Deoxythymidine 5′-triphosphate: Deoxycytidine 5′-triphosphate and, regulatory influence, deoxycytidylate deaminase, nucleotide interconversions, *Maley and Maley*, PC3311
Depolymerase: Polysaccharide. *See* Polysaccharide depolymerase
Desmosterol: Localization, turnover, cholesterol metabolism, *Fish, Boyd, and Stokes*, 334
Desulfovibrio desulfuricans: Sulfate reduction with adenosine-5′-phosphosulfate, *Peck*, 198
Dextrin(s): Starch and, glucosyl transfer, *Candida* transglucosyl-amylase, *Sawai and Hehre*, 2047
Dhurrin: Cyanogenic glucoside, *Sorghum vulgare*, biosynthesis, metabolism of aromatic compounds in higher plants, *Koukol, Miljanich, and Conn*, 3223
Diaminopimelic acid: Synthesis, branching point, *Gilvarg*, 482
Diaphorase: Diphosphopyridine nucleotide. *See* Diphosphopyridine nucleotide diaphorase
Diaphragm: Amino acid uptake, insulin action, *Akedo and Christensen*, 118
Diastereoisomer(s): Deacylation, β-hydroxy-β-methylglutaryl coenzyme A, yeast extracts, *Kirtley, Rudney, and Durr*, 1781
Diazoacetylchymotrypsin: Photolysis, *Singh, Thornton, and Westheimer*, PC3006
Diesterase: Brain; hydrolysis, ribonucleoside 2′,3′-cyclic phosphates, *Drummond, Iyer, and Keith*, 3535
Diet(s): Protein-free; fasting and, effects, urea cycle enzymes, rat liver, *Schimke*, 1921
Diethyl ether: Alcohols and, competitive inhibition by, α-chymotrypsin, *Miles, Morey, Crain, Gross, San Julian, and Canady*, 1319
Diethylstilbestrol: Adenosine diphosphate and, pyridine nucleotide coenzyme binding, glutamic dehydrogenase, *Tomkins, Yielding, and Curran*, 1704
Steroid hormones and, structural and functional changes, pyruvate kinase, *Kimberg and Yielding*, 3233
-Treated men, plasma, isolation of corticosteroid-binding globulin, *Seal and Doe*, 3136
Digalacturonic acid: α,β-Unsaturated, characterization, *Hasegawa and Nagel*, 619
Digitonin: Particles, oligomycin, action, inorganic orthophosphate-adenosine triphosphate and adenosine diphosphate-adenosine triphosphate exchange reactions, *Kulka and Cooper*, 936
Diheme peptide(s): *Chromatium* RHP, *Dus, Bartsch, and Kamen*, 3083
Dihydrocoumarin hydrolase: Purification, properties, *Melilotus alba*, aromatic compounds metabolism, higher plants, *Kosuge and Conn*, 1653
Dihydrodiphosphopyridine nucleotide dehydrogenase: Assay, particulate and soluble preparations, *Minakami, Ringler, and Singer*, 569
Respiratory chain-linked; study, *Minakami, Ringler, and Singer*, 569
Dihydrolipoic acid: Reaction, and flavins, spectral changes, flavin-peroxide interaction, *Massey and Atherton*, 2965
Dihydroorotic dehydrogenase: Triphosphopyridine nucleotide-linked, properties, *Udaka and Vennesland*, 2018
Dihydroxy-5β-cholanic acid: 3β,12α-; isolation from feces, synthesis, 3β-hydroxylated bile acids, bile acids and steroids, *Danielsson, Eneroth, Hellström, and Sjövall*, 3657
Dihydroxycholesterol: 20α,22ξ-; intermediate, pregnenolone biosynthesis, cholesterol, *Shimizu, Gut, and Dorfman*, 699
Dihydroxyphenylethylamine-β-hydroxylase: Mechanism, *Smith and Kirshner*, 1890
Diiodotyrosine: 3,5-; aliphatic, alicyclic, and aromatic ethers, antigoitrogenic, calorigenic, and hypocholesteremic activities, rat, thyroxine analogues, Jorgensen, *Lehman, Greenberg, and Zenker*, 3832
Dimethylglycine dehydrogenase: Separation and purification, *Frisell and Mackenzie*, 94
Dinucleotide(s): Flavin adenine. *See* Flavin adenine dinucleotide(s)
Nicotinamide adenine. *See* Nicotinamide adenine dinucleotide

Dinucleotide(s)—*Continued*
—, reduced. *See under* Nicotinamide adenine dinucleotide
Ribonucleic acid digest, *Rushizky and Sober*, 834
Diphosphate(s) Adenosine. *See* Adenosine diphosphate
Cytidine. *See* Cytidine diphosphate
Deoxycytidine. *See* Deoxycytidine diphosphate
Guanosine. *See* Guanosine diphosphate
Nucleotide. *See* Nucleotide diphosphate(s)
Thymidine. *See* Thymidine diphosphate
Uridine. *See* Uridine diphosphate
Diphosphoadenosine: 3′,5′-; requirement, luminescent reaction, bioluminescence studies, *Renilla reniformis, Cormier*, 2032
Diphosphopyridine nucleotidase: Activity, methylbis(β-chloroethyl)amine effect, Ehrlich ascites cells, role, glycolysis, *Green and Bodansky*, 1752
Diphosphopyridine nucleotide: -Linked aldehyde dehydrogenase, specificity and *sigma-rho* function, *Deitrich, Hellerman, and Wein*, 560
Reduced; -coenzyme Q reductase, preparation, properties, electron transfer system studies, *Hatefi, Haavik, and Griffiths*, 1676
—; extramitochondrial, oxidation, hydrogen transport pathways, flight muscle, *Sacktor and Dick*, 3259
—; mechanism, triosephosphate dehydrogenase inactivation, *Amelunxen and Grisolia*, 3240
—; muscle triosephosphate dehydrogenase inactivation, physiological concentrations, *Tucker and Grisolia*, 1068
-Specific polyol dehydrogenase, *Candida utilis*, pentose metabolism, *Chakravorty, Veiga, Bacila, and Horecker*, 1014
Diphosphopyridine nucleotide dehydrogenase: Reduced; snake venom digest, heart muscle preparation, preparation, properties, *King and Howard*, 1686
Diphosphopyridine nucleotide diaphorase: Human erythrocytes, purification and properties, *Scott and McGraw*, 249
Diphosphopyridine nucleotide oxidase: Reduced; *Streptococcus faecalis*, purification, properties, *Hoskins, Whiteley, and Mackler*, 2647
Disaccharide(s): New, naturally occurring, β-D-ribofuranosyl β-D-ribofuranoside, *Rosenberg and Zamenhof*, 1040
Dispersion: Optical rotatory; myosin A, effect of inorganic salt, *Tonomura, Sekiya, and Imamura*, 3110
Rotatory, study, denaturation, catalase and peroxidase, *Osbahr and Eichhorn*, 1820
Disulfide(s): Effect, water uptake and extrusion, mitochondria, *Neubert and Lehninger*, 952
Enzymatic elimination mechanism, *Flavin*, 768
Photoreduction system, *Rhodospirillum rubrum*, chromatophores, *Newton*, 3282
-Sulfhydryl interchange, insulin action mechanism, *Carlin and Hechter*, PC1371
Dystrophy: Muscular. *See* Muscular dystrophy

E

Effect(s): Bohr; human hemoglobin, influence of salts, studies, relations, molecular and functional properties, hemoglobin, *Antonini, Wyman, Rossi-Fanelli, and Caputo*, 2773
Egg white: Protein formation site, *Mandeles and Ducay*, 3196
Ehrlich ascites cell(s): *See under* Cell(s)
Electrolyte(s): Polyvalent, interaction, acceptor sites, cytochrome *c* reductase inhibition, *Nygaard*, 742
Electron(s): -Transferring flavoproteins, fatty acyl coenzyme A and sarcosine dehydrogenase systems, functional identity, *Beinert and Frisell*, 2988
Electron spin resonance: Study, microsomal electron transport, *Hashimoto, Yamano, and Mason*, PC3843
Electron transfer: Flavoprotein; purification, coupled flavoenzymes, mitochondrial oxidation, *N*-methyl groups, *Frisell, Cronin, and Mackenzie*, 2975
Phospholipids in, studies, electron transfer system, *Fleischer, Brierley, Klouwen, and Slautterback*, 3264
Electron transfer system: Studies, DPNH-coenzyme Q reductase, preparation, properties, *Hatefi, Haavik, and Griffiths*, 1676
Studies, effects, antimycin, cytochrome *b*, *Pumphrey*, 2384
—, reconstitution, *Hatefi, Haavik, Fowler, and Griffiths*, 2661
—, reduced coenzyme Q (QH_2)-cytochrome *c* reductase, *Hatefi, Haavik, and Griffiths*, 1681
—, role of phospholipids in electron transfer, *Fleischer, Brierley, Klouwen, and Slautterback*, 3264
Electron transport: Microsomal; electron spin resonance study, *Hashimoto, Yamano, and Mason*, PC3843
Mitochondrial swelling and, reversal, *Packer*, 1327
Electron transport particle: Yeast, purification, properties, *Mackler, Collipp, Duncan, Rao, and Huennekens*, 2968
Electron transport system(s): *Hydrogenomonas eutropha, Repaske*, 1351
Electrophoresis: Moving boundary; behavior, acid isomerization, human mercaptalbumin, *Clark, Rachinsky, and Foster*, 2509
Paper; separation and characterization, acid-induced insulin transformation products, 7 M urea, *Sundby*, 3406
Pituitary and peptide hormone characterization, starch gel, *Barrett, Friesen, and Astwood*, 432
Zone; polyacrylamide gel, resolution, oligomeric and isomeric forms, plasma albumin, *Sogami and Foster*, 2514
Electroshock: Effects, acid-soluble phosphates, rat brain, *Minard and Davis*, 1283
Electrostatic forces: Relative importance, interaction of ribonuclease and ribonucleic acid, *Mora*, 3210
Embryo(s): Chick; cholesterol metabolism, *Fish, Boyd, and Stokes*, 334
—; intracellular localization studies, collagen synthesis, *Prockop, Peterkofsky, and Udenfriend*, 1581
Development, transamidinase activity repression during, *Walker and Walker*, 473
Endonuclease: Inhibition, ribonucleic acid, study, *Lehman, Roussos, and Pratt*, 829
Ribonucleic acid-inhibitable, purifica-

Endonuclease—*Continued*
tion and properties, *Lehman, Roussos, and Pratt,* 819
Enzyme(s): -Bound activated glutamic acid; formation, evidence of, studies, glutamine synthesis mechanism, *Krishnaswamy, Pamiljans, and Meister,* 2932
— pyridoxal 5-phosphate, spectral properties, serine transhydroxymethylase, *Schirch and Mason,* 2578
CO_2 fixation; propionic acid bacteria, phosphoenolpyruvic carboxytransphosphorylase, *Siu and Wood,* 3044
Escherichia coli, deoxycytidine diphosphate formation from cytidine diphosphate by, enzymatic synthesis of deoxyribonucleotides, *Reichard,* 3513
Esteroproteolytic, pancreas, crystallization, characterization, *Gjessing and Hartnett,* 2201
Formate-activating; from erythrocytes, purification, properties, *Bertino, Simmons, and Donohue,* 1314
—; from *Micrococcus aerogenes,* reaction mechanism, *Whitely and Huennekens,* 1290
Hematin, of *Hemophilus parainfluenzae, White and Smith,* 1322
Hog pancreas; purification, study, tyrosine activation and transfer, soluble ribonucleic acid, *Clark and Eyzaguirre,* 3698
Inhibition and repression, asparagine biosynthesis, *Lactobacillus arabinosus,* control by asparagine, *Ravel, Norton, Humphreys, and Shive,* 2845
Insulin-degrading; action, *Tomizawa,* 428
Level; evidence, increase, basis, glucocorticoid-induced increase in glutamic-alanine transaminase activity, rat liver, *Segal, Rosso, Hopper, and Weber,* PC3303
Lysozymal; increased, muscular dystrophy, vitamin E-deficient rabbits, *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday,* 2678
Neisseria meningitidis, biosynthesis, cytidine 5′-monophospho-*N*-acetylneuraminic acid, *Warren and Blacklow,* 3527
Phenylalanine-activating, *Escherichia coli* 9723, purification, substrate specificity, *Conway, Lansford, and Shive,* 2850
Enzyme(s)—*Continued*
Preparations, particulate, mammary glands, lactose synthesis, *Watkins and Hassid,* 1432
Rat liver; hydrolysis, long chain fatty acid cholesterol esters, *Deykin and Goodman,* 3649
Reactions, phenolic compounds, hydroxystyrene formation, decarboxylation, 4-hydroxycinnamic acids, *Aerotobacter, Finkle, Lewis, Corse, and Lundin,* 2926
Respiratory, *Tetrahymena pyriformis,* study, *Eichel and Rem,* 940
Ribonucleic acid-dependent ribonucleotide incorporation, purification and properties, *August, Ortiz, and Hurwitz,* 3786
Skin; uronic acid biosynthesis, uridine diphosphate-D-glucose dehydrogenase, rabbit skin, *Jacobson and Davidson,* 635
—; —, uridine diphosphate-D-glucuronic acid-5-epimerase, *Jacobson and Davidson,* 638
Substrate and hormonal induction, liver tryptophan pyrrolase, increased titers, immunochemical evidence, *Feigelson and Greengard,* 3714
System(s), propionyl holocarboxylase, preparation, properties, *Kosow, Huang, and Lane,* 3633
—, purification, properties, γ-hydroxyglutamate conversion, glyoxylate and alanine, *Dekker and Maitra,* 2218
—, monoiodotyrosine synthesis, studies, particulate system, *Witonsky and Kirkwood,* 2892
—, mycobacteria, inhibition, transglycosidase-catalyzed formation, trehalose 6-phosphate, *Goldman and Lornitzo,* 3332
Thymus nuclei; polyribonucleotide formation, adenosine triphosphate, polynucleotide nature, *Edmonds and Abrams,* 2636
Uracil-catabolizing; and liver regeneration rate, relation, *Fritzson,* 150
Urea cycle; effects, fasting, protein-free diets, levels, rat liver, *Schimke,* 1921
—; rat, adaptive characteristics, *Schimke,* 459
Epimerase: Uridine diphosphate-D-glucuronic acid-5-. *See* Uridine diphosphate-D-glucuronic acid-5-epimerase
Epinephrine: Conversion, enzymatic, from epinine, *Bridgers and Kaufman,* 526
7-H^3-; metabolites, rat, biliary and urinary excretion, *Hertting and LaBrosse,* 2291
Stimulation of glucose oxidation, thyroid, study, *Pastan, Herring, Johnson, and Field,* 287
Epinine: Conversion, enzymatic, to epinephrine, *Bridges and Kaufman,* 526
Equations: Integrated velocity; kinetics, yeast D-lactic cytochrome *c* reductase, *Graae and Nygaard,* 3255
Equilibration: Radiochemical; phosphorus-containing precursors, deoxyribonucleic acid, rat liver, *Ives and Barnum,* 2599
Equilibration studies: Human bone powder, carbonate ion role, *MacGregor and Nordin,* 2704
Equilibrium analysis: Glutamic oxaloacetate transaminase mechanism, *Velick and Vavra,* 2109
Eremothecium ashbyii: Riboflavin biosynthesis, utilization, ureide carbon of adenine, *Smith, Connelly, and Smead,* 3207
Ergothionase: *Escherichia coli, Wolff,* 874
Ergothioneine: Biosynthesis, reaction sequence, hercynine intermediate, *Askari and Melville,* 1615
Erythrocyte(s): Formate-activating enzyme, purification, properties, *Bertino, Simmons, and Donohue,* 1314
Human; diphosphopyridine nucleotide diaphorase, *Scott and McGraw,* 249
—; glucose 6-phosphate dehydrogenase, purification, characterization, *Kirkman,* 2364
—; —, subactive enzyme states, normal persons, *Kirkman and Hendrickson,* 2371
—; purine nucleotide synthesis, enzymatic deficiencies, *Lowy, Williams, and London,* 1622
Surface charge, sialic acid contribution, *Eylar, Madoff, Brody, and Oncley,* 1992
Erythromycin: Erythronolide biogenesis, *Kaneda, Butte, Taubman, and Corcoran,* 322
Erythronolide: Biogenesis, *Kaneda, Butte, Taubman, and Corcoran,* 322
Escherichia coli: 9723; phenylalanine-activating enzyme, purification,

Escherichia coli—*Continued*
substrate specificity, *Conway, Lansford, and Shive,* 2850
Adenine-histidine relationship, enzymatic basis, *Shedlovsky and Magasanik,* 3731
Alkaline phosphatase, substrate specificity of, study, *Heppel, Harkness, and Hilmoe,* 841
Cell-free preparations, protein synthesis, chloramphenicol effect, *Rendi and Ochoa,* 3711
Deoxyribonucleases, purification and properties, ribonucleic acid-inhibitable endonuclease, *Lehman, Roussos, and Pratt,* 819
—, ribonucleic acid inhibition of endonuclease, *Lehman, Roussos, and Pratt,* 829
Diazo-oxo-norleucine-resistant; diazo-oxo-norleucine inhibition mechanism in, *Tomisek and Reid,* 807
Enzymes; deoxycytidine diphosphate formation from cytidine diphosphate by, enzymatic synthesis of deoxyribonucleotides, *Reichard,* 3513
Ergothionase from, *Wolff,* 874
K12λ; deoxyribonucleases, effect of lysogenic induction, *Weissbach and Korn,* PC3312
Nucleoside phosphorylase activity, 1-β-D-arabinosyluracil, *Tono and Cohen,* 1271
Pentose pathway, quantitative significance, *Rittenberg and Ponticorvo,* PC2709
Phosphatidylserine synthesis, *Kanfer and Kennedy,* PC270
Pyridine nucleotide biosynthesis, *Imsande and Pardee,* 1305
Serine-glycine auxotrophs, metabolite uptake, studies, *Levine and Simmonds,* 3718
T2- and T6-infected; glucosyl transferases from, *Zimmerman, Kornberg, and Kornberg,* 512
T4-infected; α- and β-glucosyl transferases, glucosylation, deoxyribonucleic acid, *Josse and Kornberg,* 1968
T6r$^+$-infected; deoxyribosyl-synthesizing system extraction from, spermidine, *Cohen and Barner,* PC1376
Thymidine diphosphate L-rhamnose synthesis, thymidine diphosphate 4-keto-6-deoxy-D-glucose intermediate, *Okazaki, Okazaki, Strominger, and Michelson,* 3014
Thymidylate synthetase, early steps, purification, enzymatic synthesis of thymidylate, *Wahba and Friedkin,* 3794
Tryptophan synthetase, A protein, *Henning, Helinski, Chao, and Yanofsky,* 1523
—, —, amino-terminal sequence, *Carlton and Yanofsky,* 1531
W; Isoleucine formation, β-methylaspartic acid, *Abramsky, Rowland, and Shemin,* PC265
Wild-type; norleucine inhibition mechanism in, *Tomisek and Reid,* 807

Ester(s): Fatty acid; carnitine, metabolism, mitochondria, carnitine in intermediary metabolism, *Bremer,* 3628
Long chain fatty acid; cholesterol, hydrolysis, rat liver enzymes, *Deykin and Goodman,* 3649
Methanesulfonic acid; irreversible inhibitors of acetylcholinesterase, *Kitz and Wilson,* 3245

Esterase: Activity, effects, alcohol, kinetic models, kinetics of carboxypeptidase B activity, *Folk, Wolff, Schirmer, and Cornfield,* 3105

Esterification: Monoglycerides, palmityl coenzyme A, intestinal epithelial subcellular fractions, *Senior and Isselbacher,* 1454

Estrogen: Metabolism, normal and pregnant women, *Fishman, Brown, Hellman, Zumoff, and Gallagher,* 1489

Ethanol: Acetate, pyruvate, butyrate and, metabolism, "drinker" and "nondrinker" rats, *Segovia-Riquelme, Campos, Solodkowska, González, Alvarado, and Mardones,* 2038

Ether(s): Alicyclic. See *Alicyclic ethers*
Aliphatic. *See* Aliphatic ethers
Aromatic. *See* Aromatic ethers
Diethyl. *See* Diethyl ether

Ethionine: -Treated rats, hepatic phosphorylase and adenosine triphosphate levels, *Shull,* PC1734

Ethylene glycol: Conformation, γ-globulin, β-lactoglobulin, effect on, *Tanford, Buckley, De, and Lively,* 1168

Exchange: Isotopic; tracer experiments, propionyl carboxylase reaction mechanism, *Kaziro, Hass, Boyer, and Ochoa,* 1460

Excretion: Biliary and urinary, 7-H^3-epinephrine metabolites, rat, *Hertting and LaBrosse,* 2291

Exophthalmos: -Producing substance, nature, lacrimal mucoprotein, *Brunish,* 2816

Eyelid(s): Opening; incisor eruption and, mouse submaxillary gland protein isolation, *Cohen,* 1555

F

Farnesyl pyrophosphate: 1-H$_2^3$-2-C^{14}- and 1-D$_2$-2-C^{14}-*trans-trans*-; chemical synthesis, utilization is squalene biosynthesis, *Popják, Cornforth, Cornforth, Ryhage, and Goodman,* 56

Fasciola hepatica: Phosphofructokinase, effect, serotonin and adenosine phosphate, *Mansour and Mansour,* 629

Fatty acid(s): Ammonia and, lysine fermentation, cobamide coenzyme-dependent process, *Stadtman,* PC2409
Esters; carnitine, metabolism, mitochondria, carnitine in intermediary metabolism, *Bremer,* 3628
Glyceride, rearrangement during digestion and absorption, *Mattson and Volpenhein,* 53
Inhibition, complex formation, *Cann,* 707
Long chain; cholesterol esters, hydrolysis, rat liver enzymes, *Deykin and Goodman,* 3649
Saturated and unsaturated; biosynthesis, evidence, separate pathways, avocado enzyme system, *Barron and Stumpf,* PC613
Synthesis, precursor supply *Spencer and Lowenstein,* 3640
—, tricarboxylic acid cycle regulation, mechanism, *Martin and Vagelos,* 1787
—, mechanism, reaction product, sulfhydryl groups, *Bressler and Wakil,* 1441
— —, studies, acetyl coenzyme A carboxylase, *Waite and Wakil,* 2750
—, study, *Wakil and Bressler,* 687
Triglycerides and, transport and metabolism in isolated perfused rat liver, carbon tetrachloride action, relationship, etiology of fatty liver, *Heimberg, Weinstein, Dishmon, and Dunkerley,* 3623
Unsaturated, in microorganisms, *Scheuerbrandt and Bloch,* 2064

XUM

Fatty acid coenzyme A: *See under* Coenzyme A
Feces: Isolation, 3β,12α-dihydroxy-5β-cholanic acid, synthesis, 3β-hydroxylated bile acids, bile acids and steroids, *Danielsson, Eneroth, Hellström, and Sjövall,* 3657
Feedback: Inhibition, control by, enzymology, *Gerhart and Pardee,* 891
—, purine biosynthesis, ascites tumor cells, *Henderson,* 2631
Pyrimidine, enzymology, *Gerhart and Pardee,* 891
Fermentation: Allantoin, mechanism, *Valentine, Bojanowski, Gaudy, and Wolfe,* 2271
Lysine; fatty acids, ammonia, cobamide coenzyme-dependent process, *Stadtman,* PC2409
Ferrihemoprotein: *Lespedeza* nodules, *Thorogood,* PC267
Fetuin: Monosaccharide sequence, study, *Spiro,* 646
Peptide portion, composition, *Spiro and Spiro,* 1507
Study, fetal serum glycoprotein, carbohydrate units, *Spiro,* 382
Fetus: Rat, normal and riboflavin-deficient, flavin nucleotides and folic acid in, *Miller, Poncet, and Takacs,* 968
Fibrinogen: Interaction with thrombin, species differences, *Doolittle, Oncley, and Surgenor,* 3123
Fish: Fresh-water; conversion, vitamin A_1, retinene$_2$, *Naito and Wilt,* 3060
Fixation: Carbon dioxide, brain, *Berl, Takagaki, Clarke, and Waelsch,* 2570
Flatworm(s): Carbon dioxide fixation, marine invertebrates, main pathway, *Hammen and Lum,* 2419
Flavin(s): Free; lipoyl dehydrogenase and, charge transfer complexes, *Massey and Palmer,* 2347
-Induced, photodependent thyroxine deiodination, activation, inert proteins, *Morreale de Escobar, Escobar del Rey, and Llorente Rodriguez,* PC2041
Partition, heart muscle preparation, heart mitochondria, *King, Howard, Wilson, and Li,* 2941
-Peroxide interaction, spectral changes, reaction, dihydrolipoic acid and flavins, *Massey and Atherton,* 2965
Flavin(s)—*Continued*
Reaction, and dihydrolipoic acid, spectral changes, flavin-peroxide interaction, *Massey and Atherton,* 2965
Flavin adenine dinucleotide(s): Requirement, enzymic hydroxylation, decarboxylation, salicylic acid, *Katagiri, Yamamoto, and Hayaishi,* PC2413
Flavin nucleotide(s): Fetus and liver, normal and riboflavin-deficient rats, *Miller, Poncet, and Takacs,* 968
Flavoenzyme(s): Coupled; mitochondrial oxidation, *N*-methyl groups, purification, electron transfer flavoprotein, *Frisell, Cronin, and Mackenzie,* 2975
Flavokinase: Rat liver, intracellular localization, partial purification, properties, *McCormick,* 959
Flavoprotein(s): Electron transfer; purification, coupled flavoenzymes, mitochondrial oxidation, *N*-methyl groups, *Frisell, Cronin, and Mackenzie,* 2975
Electron-transferring; fatty acyl coenzyme A and sarcosine dehydrogenase systems, functional identity, *Beinert and Frisell,* 2988
Oxidation, reduced ribosyl nicotinamide, purification, properties, *Liao, Dulaney, and Williams-Ashman,* 2981
Flow studies: Birefringence, adenosine triphosphatase, clearing and superprecipitation, actomyosin, interaction, adenosine triphosphate, low ionic strength, *Maruyama and Gergely,* 1100
Fluke: Liver, phosphofructokinase from, *Mansour and Mansour,* 629
Fluorescence: Pyridine nucleotides, mitochondria, *Avi-Dor, Olson, Doherty, and Kaplan,* 2377
Fluoromalic acid: DL-β-; stereochemical configuration, *Krasna,* 1418
Fluorouracil: 5-; effect, formation of tryptophan pyrrolase, *Nemeth,* 3703
Flux: Cholesterol, quantitative aspects, rabbit atheromatous lesions, *Newman and Zilversmit,* 2078
Folates: Chicken liver; distribution, folic acid derivatives, natural material, *Noronha and Silverman,* 3299
Folic acid: Biosynthesis, *Brown,* 536
Derivatives; distribution in natural
Folic acid—*Continued*
material, chicken liver folates, *Noronha and Silverman,* 3299
Effect, tyrosine metabolism, guinea pigs, *Zannoni, Jacoby, Malawista, and La Du,* 3506
Fetus and liver, normal and riboflavin-deficient rats, *Miller, Poncet, and Takacs,* 968
Methylenetetrahydrofolic acid, enzymatic conversion, prefolic A-methyltetrahydrofolate, *Donaldson and Keresztesy,* 1298
Naturally occurring forms, characterization and properties, 5-methyldihydrofolate, oxidation product, 5-methyltetrahydrofolate, *Donaldson and Keresztesy,* 3815
Pteridine moiety, enzymatic formation, guanine compounds, *Reynolds and Brown,* PC2713
Formaldehyde dehydrogenase: Bakers' yeast, *Rose and Racker,* 3279
Formate: -Activating enzyme; from erythrocytes, purification, properties, *Bertino, Simmons, and Donohue,* 1314
—; from *Micrococcus aerogenes,* reaction mechanism, *Whiteley and Huennekens,* 1290
Formyltetrahydrofolate: Thymine and; biosynthesis, vitamin B_{12}-deficient cells, *Lactobacillus leichmannii, Roberts and Nichol,* 2278
Formyltetrahydrofolate synthetase: Characteristics, enzyme and enzymic reaction, *Himes and Rabinowitz,* 2903
Isolation and crystallization, *Rabinowitz and Pricer,* 2898
Studies, reaction mechanism, *Himes and Rabinowitz,* 2915
Fractionation: Chromatographic; deoxyribonucleic acids, *Frankel and Crampton,* 3200
Plasma containing long acting thyroid stimulator, *McKenzie,* PC3571
Fraction II-3: Human globulin; glycopeptides, isolation and properties, *Nolan and Smith,* 453
Frog(s): Sartorius muscle, glucose uptake, effect, anaerobiosis, tissue permeability studies, *Özand, Narahara, and Cori,* 3037
Fructose: Intraportally injected; metabolism, rat liver, *in vivo, Muntz and Vanko,* 3582
Metabolism, adipose tissue, comparison, fructose and glucose metabolism, epididymal adipose tissue,

Fructose—*Continued*
normal rats, *Froesch and Ginsberg*, 3317
Fructose 6-phosphate: D-; interconversion with sedoheptulose 7-phosphate and D-xylose 5-phosphate, transketolase and transaldolase, *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti*, 3597
Fucan: Properties, highly purified, *Bernardi and Springer*, 75
Fucose: L-; metabolism, enzymatic cleavage, L-fuculose 1-phosphate, *Ghalambor and Heath*, 2427
—, purification, properties, L-fuculose kinase, *Heath and Ghalambor*, 2423
Fuculose kinase: L-; purification, properties, L-fucose metabolism, *Heath and Ghalambor*, 2423
Fuculose 1-phosphate: L-; enzymatic cleavage, L-fucose metabolism, *Ghalambor and Heath*, 2427
Function: Metabolic. *See* Metabolic function

G

Galactose: *N*-Acetylglucosamine, uridine nucleotide, *Suzuki*, 1393
Uridine diphosphate *N*-acetylglucosamine-6-phospho-1-; hen oviduct, *Gabriel and Ashwell*, 1400
Galactose oxidase: D-; *Polyporus circinatus, Avigad, Amaral, Asensio, and Horecker*, 2736
Gel: Polyacrylamide; zone electrophoresis, resolution, oligomeric and isomeric forms, plasma albumin, *Sogami and Foster*, 2514
Gentiobiose: Deoxyribonucleic acid constituent, coliphage T6, *Kuno and Lehman*, 1266
Gland(s): Mammary. *See* Mammary glands
Submaxillary. *See* Submaxillary gland
Globulin(s): β_{2A}-; anomalous; myeloma and macroglobulinemic sera, chromotographic study, *Fahey*, 440
Bovine; glycopeptides, isolation and properties, *Nolan and Smith*, 453
Corticosteroid-binding; isolation, plasma of diethylstilbestrol-treated men, *Seal and Doe*, 3136
γ-; and β-lactoglobulin, conformation, ethylene glycol, effect, *Tanford, Buckley, De, and Lively*, 1168
—; anomalous; myeloma and macroglobulinemic sera, chromotographic study, *Fahey*, 440
Globulin(s)—*Continued*
—; normal, myeloma and macroglobulinemic sera, chromotographic study, *Fahey*, 440
γ-; rabbit, carboxyl-terminal amino acids, *Silman, Cebra, and Givol*, 2196
—; —, cleavage, papain, *Putnam, Tan, Lynn, Easley, and Migita*, 717
—; —, glycopeptides, isolation and properties, *Nolan and Smith*, 446
—; secretion mechanism, isolated lymph node cells, observations, *Helmreich, Kern, and Eisen*, 1925
Human; glycopeptides, isolation and properties, *Nolan and Smith*, 453
Glucocorticoid: -Induced increase, glutamic-alanine transaminase activity, rat liver, basis, evidence for increase in enzyme level, *Segal, Rosso, Hopper, and Weber*, PC3303
Gluconic acid: 2-keto-3-deoxy-D-; from enzymatic reduction, uronic acid, *Preiss and Ashwell*, 317
Glucosamine: D-; -1-C^{14}, metabolism, and *N*-acetyl-D-glucosamine-1-C^{14}, rat liver, hexosamine metabolism, *McGarrahan and Maley*, 2458
—; Metabolism, intact rat, *Kohn, Winzler, and Hoffman*, 304
N-Acetyl-; galactose, uridine nucleotide, *Suzuki*, 1393
— -D-; metabolism, intact rat, *Kohn, Winzler, and Hoffman*, 304
— - —; -1-C^{14}, metabolism, and D-glucosamine-1-C^{14}, rat liver, hexosamine metabolism, *McGarrahan and Maley*, 2458
3-*O*-β-D-Galactopyranosyl-*N*-acetyl-D-; free and phosphorylated, formation *in vitro, Glick, Chen, and Zilliken*, 981
Glucose: D-; Cellobiose, other saccharides and, formation, cellulose synthesis, *Acetobacter acetigenum*, lactate-buffered glycerol medium, *Ramamurti and Jackson*, 2434
Adenosine diphosphate. *See* Adenosine diphosphate glucose
-2-C^{14}, glycerol-1,3-C^{14}, labeling, precursors, lactose synthesis, *Hansen, Wood, Peeters, Jacobson, and Wilken*, 1034
Catabolic fate in *Bacillus subtilis, Wang and Krackov*, 3614
Cycloacetoacetate; C^{14}-labeled, conversion, L-ascorbic acid, *Phaseolus radiatus, Belkhode, and Nath*, 1742
Glucose—*Continued*
2-Deoxy-D-; Resistance to, mammalian cell cultures, study, *Barban*, 291
Guanosine diphosphate. *See* Guanosine diphosphate glucose
p-Hydroxymandelonitrile-β-; C^{14} incorporation, other phenolic substances, sorghum seedlings, *Gander*, 3229
Metabolism, aerobic, by bone, *Cohn and Forscher*, 615
—, cortisol effects, adipose tissue, studies *in vitro, Leboeuf, Renold, and Cahill*, 988
—, normal rat epididymal adipose tissue, comparison with fructose metabolism, fructose metabolism of adipose tissue, *Froesch and Ginsberg*, 3317
Oxidation, anterior pituitary, *Barondes*, 204
—, thyroid, epinephrine stimulation, *Pastan, Herring, Johnson, and Field*, 287
Thymidine diphosphate 4-keto-6-deoxy-D-. *See* Thymidine diphosphate 4-keto-6-deoxy-D-glucose
Uptake, frog sartorius muscle, effect, anaerobiosis, tissue permeability studies, *Özand, Narahara, and Cori*, 3037
Uridine diphosphate. *See* Uridine diphosphate glucose
Glucose dehydrogenase: Uridine diphosphate-D-; isolation, purification, rabbit skin, *Jacobson and Davidson*, 635
Glucose 1-phosphate: Adenosine triphosphate and, enzymatic synthesis, adenosine diphosphate glucose, *Espada*, 3577
Glucose 6-phosphate dehydrogenase: Activity, and reduced triphosphopyridine nucleotide formation, adrenal tissue, dehydroepiandrosterone effect, *Tsutsui, Marks, and Reich*, 3009
Human erythrocytes, purification, characterization, *Kirkman*, 2364
—, subactive enzyme states, normal persons, *Kirkman and Hendrickson*, 2371
Glucoside(s): Cyanogenic; *Sorghum vulgare*, dhurrin, biosynthesis, metabolism of aromatic compounds in higher plants, *Koukol, Miljanich, and Conn*, 3223
Hydrolysis, amyloglucosidase, *Asper-*

Glucoside(s)—*Continued*
gillus niger, Pazur and Kleppe, 1002
Glucosiduronic acid: β-(8-xanthurenyl)-; formation in rat and rat kidney slices, *Johnston and Mason,* 29
Glucosyl: Transfer, starch, dextrins, *Candida* transglucosyl-amylase, *Sawai and Hehre,* 2047
Glucosylation: Deoxyribonucleic acid, α- and β-glucosyl transferases, T4-infected *Escherichia coli, Josse and Kornberg,* 1968
Glucosyl transferase(s): α-; β-glucosyl transferase and, T4-infected *Escherichia coli,* glucosylation, deoxyribonucleic acid, *Josse and Kornberg,* 1968
—; T2- and T6-infected *Escherichia coli, Zimmerman, Kornberg, and Kornberg,* 512
β-; α-glucosyl transferase and, T4-infected *Escherichia coli,* glucosylation, deoxyribonucleic acid, *Josse and Kornberg,* 1968
Uridine diphosphate D-glucose-glycogen. *See* Uridine diphosphate D-glucose-glycogen glucosyltransferase
Glucuronic acid-5-epimerase: Uridine diphosphate-D-; separation, uridine diphosphate-glucose dehydrogenase, *Jacobson and Davidson,* 638
Glucuronidase: β-; Liver, kidney, urine, purification and properties, *Pettengill and Fishman,* 24
Glucuronosides: Urinary; ketosteroids, chemical cleavage studies, *Jacobsohn and Lieberman,* 1469
Glucuronyl transferase: Rabbit liver microsomes, solubilization, partial purification, *Isselbacher, Chrabas, and Quinn,* 3033
Glutamic acid: D-; enzymatic addition, and L-alanine, L-lysine, enzymatic synthesis, peptide, bacterial uridine nucleotides, *Ito and Strominger,* 2689
α-Aminoadipic acid and, pipecolic acid metabolism, *Pseudomonas, Rao and Rodwell,* 2232
Ammonia and, metabolism, brain, liver, metabolic compartments, *Berl, Takagaki, Clarke, and Waelsch,* 2562
Copolymers, ribonuclease inhibition, *Sela,* 418
Enzyme-bound activated; evidence for formation, studies, glutamine synthesis mechanism, *Krishnaswamy, Pamiljans, and Meister,* 2932
Glutamic acid—*Continued*
Proline and, interconversion, proline oxidation, rat liver mitochondria, *Johnson and Strecker,* 1876
—, —, reduction, Δ^1-pyrroline-5-carboxylic acid, *Peisach and Strecker,* 2255
Glutamic-alanine transaminase: Activity, rat liver, glucocorticoid-induced increase, basis, evidence for increase in enzyme level, *Segal, Rosso, Hopper, and Weber,* PC3303
Liver, normal and corticoid-treated rats, purification, properties, *Segal, Beattie, and Hopper,* 1914
Rat liver; kinetic studies, *Hopper and Segal,* 3189
Glutamic-aspartic transaminase: Rat liver; conversion, γ-hydroxyglutamic acid to α-hydroxy-γ-ketoglutarate, *Goldstone and Adams,* 3476
Glutamic dehydrogenase: Beef liver; dissociation, effect, pH, other variables, *Frieden,* 2396
Pyridine nucleotide coenzyme binding, diethylstilbestrol, adenosine diphosphate, *Tomkins, Yielding, and Curran,* 1704
Sedimentation changes, *Wolff,* 230
Thyroxine, site of inhibition, *Wolff,* 236
Glutamic oxaloacetate transaminase: Mechanism, kinetic and equilibrium analysis, *Velick and Vavra,* 2109
Glutamine: L-; role, carbamyl nitrogen donor, enzymatic synthesis, citrulline, *Agaricus bisporus, Levenberg,* 2590
Asparagine and, protein-bound, determination, *Tower, Peters, and Wherrett,* 1861
Synthesis mechanism, studies, evidence, formation, enzyme-bound activated glutamic acid, *Krishnaswamy, Pamiljans, and Meister,* 2932
Glutamine synthetase: Rat cerebral cortex, intracellular distribution, structural latency, *Sellinger and Verster,* 2836
Glutaric acid: Accumulation, lysine-requiring yeast mutant, *Mattoon and Haight,* 3486
Glutathione: Glycolyl; preparation, and *N*-glycolylhexosamines, *N*-glycolylhexosamine 6-phosphates, glycolyl coenzyme A, sialic acids, *Jourdian and Roseman,* 2442
Glutathione—*Continued*
Oxidized; cystamine monosulfoxide, tetrathionate and, interaction, rabbit muscle D-glyceraldehyde 3-phosphate dehydrogenase —SH groups, *Pihl and Lange,* 1356
Glutathione-insulin transhydrogenase: Beef liver, properties, *Tomizawa,* 3393
Glutathione reductase: Hepatic; physical properties, action mechanism, *Mize, Thompson, and Langdon,* 1596
—; purification, kinetic properties, *Mize and Langdon,* 1589
Glyceraldehyde 3-phosphate dehydrogenase: D-; rabbit muscle, —SH groups, interaction, oxidized glutathione, cystamine monosulfoxide, tetrathione and, *Pihl and Lange,* 1356
Glyceric dehydrogenase: D-; Mammalian, evidence for, *Willis and Sallach,* 910
Glycerol: -C^{14}; deuterated, C^{14} distribution in glycogen from, measure of effectiveness of triosephosphate isomerase *in vivo, Rose, Kellermeyer, Stjernholm, and Wood,* 3325
-1,3-C^{14}; glucose-2-C^{14}, labeling, precursors, lactose synthesis, *Hansen, Wood, Peeters, Jacobson, and Wilken,* 1034
Lactate-buffered medium; cellulose synthesis, *Acetobacter acetigenum,* formation of D-glucose, cellobiose, other saccharides, *Ramamurti and Jackson,* 2434
Production and release, adipose tissue, *in vitro, Vaughan,* 3354
Glycerophosphate: α-; Synthesis and breakdown, adipose tissue homogenates, *Margolis and Vaughan,* 44
Glycine: Labeled, metabolism, *Klain and Johnson,* 123
Metabolism, avian liver, *Richert, Amberg, and Wilson,* 99
-Serine, auxotrophs, *Escherichia coli,* metabolite uptake, studies, *Levine and Simmonds,* 3718
Glycine oxidase: Activity, D-Amino acid oxidase, specificity, relation, *Neims and Hellerman,* PC976
Glycogen: Deuterated glycerol-C^{14}, C^{14} distribution, measure of effectiveness of triosephosphate isomerase *in vivo, Rose, Kellermeyer, Stjernholm, and Wood,* 3325

Glycogen—*Continued*
Hepatic, synthesis, *Banerjee and Ganguli*, 14
Glycogen phosphorylase: Comparative studies, immunological studies on rabbit and human skeletal muscle phosphorylase, *Yunis and Krebs*, 34
—, phosphorylated site in human muscle phosphorylase *a*, *Hughes, Yunis, Krebs, and Fischer*, 40
—, purification, properties, rabbit heart phosphorylase, *Yunis, Fischer, and Krebs*, 2809
Glycolaldehyde: -Phosphoketolase intermediate; formation and isolation, *Goldberg and Racker*, PC3841
Glycolyl coenzyme A. *See under* Coenzyme A
Glycolysis: Methylbis(β-chloroethyl)-amine effect, diphosphopyridine nucleotidase activity, Ehrlich ascites cells, role, *Green and Bodansky*, 1752
Glycopeptide(s): Isolation and properties, bovine globulin, human globulin, Fraction II-3, *Nolan and Smith*, 453
—, rabbit globulin, *Nolan and Smith*, 446
Glycoprotein: α_1 acid; human plasma, oligosaccharides from, *Eylar and Jeanloz*, 622
—; —, periodate oxidation, *Eylar and Jeanloz*, 1021
Glycosidase: Purification and properties, bull semen, *Abdel-Latif and Alivisatos*, 500
Glyoxylate: Alanine and; γ-hydroxyglutamate conversion, purification, properties, enzyme system, *Dekker and Maitra*, 2218
Gonadotropin: Action *in vitro*, *Mason, Marsh, and Savard*, 1801
Gossypol: C^{14}-labeled; biosynthesis, *Heinstein, Smith, and Tove*, 2643
Growth hormone: *See under* Hormone(s)
Guanine: Compounds; enzymatic formation, pteridine moiety, folic acid, *Reynolds and Brown*, PC2713
Guanine nucleotide: Function, *Wolff*, 236
Guanosine diphosphate glucose: Isolation, synthesis, *Carlson and Hansen*, 1260
Guanosine diphosphate D-*glycero*-D-*manno*-heptose: *Ginsburg, O'Brien, and Hall*, 497
Guanosine nucleotide(s): Uridine nucleotides and, hen oviduct, *Strominger*, 1388

Guanosine nucleotide(s)—*Continued*

H

H^3: *See* Tritium
Hadacidin: Action mechanism, *Shigeura and Gordon*, 1937
Inhibitor, purine biosynthesis, *Shigeura and Gordon*, 1932
Heart: Beef; cytochrome oxidase, green heme, isolation, properties, *Caughey and York*, PC2414
—; preparation, lactic dehydrogenase, *Schwert, Millar, and Takenaka*, 2131
Dog; 2-hydroxyethanesulfonic acid (isethionic acid), isolation, *Welty, Read, and Shaw*, 1160
—; taurine and isethionic acid synthesis, *Read and Welty*, 1521
Horse; cytochrome *c*, amino acid composition, *Margoliash, Kimmel, Hill, and Schmidt*, 2148
—; —, chymotryptic peptides, amino acid sequence, *Margoliash*, 2161
—; —, —, isolation, amino acid composition, *Margoliash and Smith*, 2151
—; —, interconversion, monomer and polymers, *Margoliash and Lustgarten*, 3397
Human; cytochrome *c*, amino acid sequence, *Matsubara and Smith*, PC3575
Mitochondria, heart muscle preparation, partition of flavin, *King, Howard, Wilson, and Li*, 2941
—, reduced nicotinamide adenine dinucleotide-cytochrome *c* reductases, comparison, formation, respiratory chain-linked dehydrogenase, *Watari, Kearney, Singer, Basinski, Hauber, and Lusty*, PC1731
Pigeon; mitochondria, adenosine diphosphate supplements, activation and inhibition of succinate oxidation, *Chance and Hagihara*, 3540
Rabbit; phosphorylase, purification, properties, comparative studies, glycogen phosphorylase, *Yunis, Fischer, and Krebs*, 2809
Preparation; heart mitochondria, partition of flavins, *King, Howard, Wilson, and Li*, 2941
—; snake venom digest, reduced diphosphopyridine nucleotide dehydrogenase, preparation, properties, *King and Howard*, 1686
Heat: -Labile factor; water extrusion, mitochondria, *Lehninger*, 946
Hematin: Enzymes, of *Hemophilus parainfluenzae*, *White and Smith*, 1332
Heme: Green; cytochrome oxidase, beef heart muscle, oxidation, properties, *Caughey and York*, PC2414
Role, titration, sperm whale myoglobin, *Breslow*, PC3308
Hemoglobin: Crystalline interspecies hybrid of, *Drabkin and Wise*, PC261
G; Chinese individuals, chemical abnormality, *Swenson, Hill, Lehmann, and Jim*, 1517
Human; α chain, chymotryptic digestion, *Hill and Konigsberg*, 3151
—; —, digestion with pepsin, *Konigsberg and Hill*, 3157
—; Bohr effect, influence of salts, studies, relations, molecular and functional properties, hemoglobin, *Antonini, Wyman, Rossi-Fanelli, and Caputo*, 2773
—; structure, α and β chains, separation, amino acid composition, *Hill, Konigsberg, Guidotti, and Craig*, 1549
—; —, amino acid sequence, tryptic peptides, α chain, *Konigsberg and Hill*, 2547
—; —, chymotryptic digestion, α chain, *Hill and Konigsberg*, 3151
—; —, digestion, α chain, pepsin, *Konigsberg and Hill*, 3157
—; —, separation, amino acid composition, tryptic peptides, α and β chains, *Guidotti, Hill, and Konigsberg*, 2184
Studies, relations, molecular and functional properties, influence of salts, Bohr effect, human hemoglobin, *Antonini, Wyman, Rossi-Fanelli, and Caputo*, 2773
Synthesis, cell-free system, *Allen and Schweet*, 760
Hemoglobin Norfolk: Chemical study, *Baglioni*, 69
Hemophilus parainfluenzae: Hematin enzymes, *White and Smith*, 1332
Studies, respiratory chain system structure, *Smith and White*, 1337
Hemoprotein: Ferri-. *See* Ferrihemoprotein
Heparin: Chemistry, reduction, hydrolysis, *Danishefsky, Eiber, and Langholtz*, 1413
Determination, intracellular distribution, effects of biological state, in

Heparin—*Continued*
mast cells, *Parekh and Glick*, 280
Heptapeptide: Production rate, insulin digestion with trypsin, *Carpenter and Baum*, 409
Heptose: Guanosine diphosphate D-*glycero*-D-*manno*-; *Ginsburg, O'Brien, and Hall*, 497
Hercynine: Intermediate, reaction sequence, ergothioneine biosynthesis, *Askari and Melville*, 1615
Hexapeptide(s): Uridine diphosphoacetylmuramyl; penicillin-treated *Streptococcus faecalis*, *Mandelstam, Loercher, and Strominger*, 2683
Hexokinase: Activity, brain, *Bennett, Drori, Krech, Rosenzweig, and Abraham*, 1758
Brain; reaction, kinetic studies, *Fromm and Zewe*, 1661
Yeast; kinetic studies, *Fromm and Zewe*, 3027
Hexosamine(s): Determination, intracellular distribution, effects of biological state, in mast cells, *Parekh and Glick*, 280
N-Glycolyl-; preparation, and *N*-glycolylhexosamine 6-phosphates, glycolyl coenzyme A, glycolyl glutathione, sialic acids, *Jourdian and Roseman*, 2442
Labeling, normal bone, bone matrix biosynthesis *in vitro*, *Deiss, Holmes, and Johnston*, 3555
Metabolism, D-glucosamine-1-C^{14}, *N*-acetyl-D-glucosamine-1-C^{14}, rat liver, *McGarrahan and Maley*, 2458
Hexose(s): Synthesis, liver and muscle, aspartate-3-C^{14}, phosphoenolpyruvate source, *Bloom and Foster*, 2744
Hexose phosphate: Synthesis, soluble and mitochondrial multienzyme systems, interaction, *Mendicino and Utter*, 1716
Hill reaction: Carbon dioxide effect, *Stern and Vennesland*, 596
Histidase: Action, mechanism, *Peterkofsky*, 787
Histidine: -Acceptor ribonucleic acids; purification, yeast, *Apgar, Holley, and Merrill*, 796
Adenine-; relationship, *Escherichia coli*, enzymatic basis, *Shedlovsky and Magasanik*, 3731
Biosynthesis, defect causing adenine deficiency, *Shedlovsky bnd Magasanik*, 3725
Histochemistry: Studies, phosphorylase distribution in rat adrenal, influence of adrenocorticotropic hormone *in vivo*, *Greenberg and Glick*, 3552
Study, *Parekh and Glick*, 280
Holocarboxylase: Propionyl. *See* Propionyl holocarboxylase
Hormone(s): Adrenocorticotropic; influence *in vivo*, phosphorylase distribution in rat adrenal, studies in histochemistry, *Greenberg and Glick*, 3552
Growth; and prolactin, enzymatic transformations, *Lewis*, 3141
Parathyroid; effects, bone matrix biosynthesis *in vitro*, *Johnston, Deiss, and Miner*, 3560
Peptide, characterization, electrophoresis, starch gel, *Barrett, Friesen, and Astwood*, 432
Pituitary, characterization, electrophoresis, starch gel, *Barrett, Friesen, and Astwood*, 432
Steroid; and diethylstilbestrol, structural and functional changes, pyruvate kinase, *Kimberg and Yielding*, 3233
—; carbon atoms, origin, bovine adrenal, acetate-1-C^{14}, corticosteroid degradation, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid*, 2085
—; formation, corpus luteum, ovarian tissue, studies *in vitro*, *Huang and Pearlman*, 1060
—; rabbit liver aldehyde dehydrogenase, *Maxwell*, 1699
Hyaluronic acid: synthesis by Streptococcus, *Markovitz and Dorfman*, 273
Hydrocortisone: Effect, tyrosine-α-ketoglutarate transaminase, tryptophan pyrrolase activities, liver, *Goldstein, Stella, and Knox*, 1723
Hydrogen: Bond; formation, studies, reactions, carbohydrates and proteins, aqueous solutions, *Giles and McKay*, 3388
Donors; catalase-hydrogen peroxide Complex I, hydrogen peroxide and, catalase inhibition kinetics, 3-amino-1,2,4-triazole, *Margoliash and Schejter*, 2359
Transfer from reduced pyridine nucleotides to microsomal cytochrome b_5 reductase, *Strittmatter*, 3250
Transport pathways, oxidation of extramitochondrial reduced diphosphopyridine nucleotide, flight muscle, *Sacktor and Dick*, 3259
Hydrogen peroxide: Catalase-; Complex I hydrogen donors, hydrogen peroxide and, catalase inhibition kinetics, 3-amino-1,2,4-triazole, *Margoliash and Schejter*, 2359
Catalase-hydrogen peroxide Complex I hydrogen donors and, kinetics, catalase inhibition, 3-amino-1,2,4-triazole, *Margoliash and Schejter*, 2359
Hydrogenomonas eutropha: Electron transport system, *Repaske*, 3151
Hydrogenomonas facilis: Isocitrate lyase, malate synthase, *McFadden and Howes*, 1410
Hydrolase: Dihydrocoumarin. *See* Dihydrocoumarin hydrolase
Hydrolysis: Enzymatic; identification, end groups, tobacco mosaic virus ribonucleic acid, *Whitfield*, 2865
Long chain fatty acid esters of cholesterol, rat liver enzymes, *Deykin and Goodman*, 3649
Ribonucleoside 2′,3′-cyclic phosphates, diesterase, brain, *Drummond, Iyer, and Keith*, 3535
Specific enzymatic; frequencies of base sequences, soluble ribonucleic acid, rabbit liver, *McCully and Cantoni*, 3760
Hydroxy acid oxidases: L-α-; hog renal cortex, *Robinson, Keay, Molinari, and Sizer*, 2001
Hydroxyanthranilic acid: 4-Methyl-3-; conversion to actinocin, *Katz and Weissbach*, 882
Hydroxyanthranilic acid oxidase: 3-; studies, *Vescia and di Prisco*, 2318
Hydroxyaspergillic acid: Biosynthesis, *MacDonald*, 1977
Hydroxybutyric acid dehydrogenase: D(−)β-; cold-sensitive; *Rhodospirillum rubrum*, *Shuster and Doudoroff*, 603
Hydroxybutyric dehydrogenase: D-β-; mitochondrial; stability, respiratory chain relationship, *Wise and Lehninger*, 1363
Hydroxycholesterol: 22-; pregnenolone biosynthesis from, *Chaudhuri, Harada, Shimizu, Gut, and Dorfman*, 703
Hydroxycinnamic acid(s): 4-; decarboxylation, *Aerobacter*, hydroxystyrene formation, enzyme reactions, phenolic compounds, *Finkle, Lewis, Corse, and Lundin*, 2926
Hydroxyethanesulfonic acid: 2- (isethionic acid); isolation, dog heart, *Welty, Read, and Shaw*, 1160

Hydroxyglutamate: γ-; conversion, glyoxylate and alanine, purification, properties, enzyme system, *Dekker and Maitra,* 2218
Hydroxyglutamic acid: α-; metabolism, conversion to α-hydroxy-γ-ketoglutarate by glutamic-aspartic transaminase of rat liver, *Goldstone and Adams,* 3476
Hydroxylase: Dihydroxyphenylethylamine. *See* Dihydroxyphenylethylamine hydroxylase
Phenylalanine. *See* Phenylalanine hydroxylase
Phenylamine. *See* Phenylamine hydroxylase
Steroid. *See* Steroid hydroxylase
Hydroxylation: Aromatic carboxylic acids, substrate specificities, anthranilate and benzoate oxidases, *Ichihara, Adachi, Hosokawa, and Takeda,* 2296
Enzymic; decarboxylation and, salicylic acid, flavin adenine dinucleotide requirement, *Katagiri, Yamamoto, and Hayaishi,* PC2413
Phenylalanine; cofactor, structure, *Kaufman,* PC2712
Tryptophan, phenylalanine hydroxylase, *Renson, Weissbach, and Udenfriend,* 2261
Hydroxylysine: Collagen, formation, *Popenoe and Van Slyke,* 3491
Effect, cell wall synthesis, stability, *Streptococcus faecalis, Smith, Newman, Leach, and Henderson,* 1198
Metabolism, *Streptococcus faecalis, Tsung, Smith, Leach, and Henderson,* 1194
Hydroxymethylase: Deoxycytidylate. *See* Deoxycytidylate hydroxymethylase
Hydroxymethylglutaryl coenzyme A: *See under* Coenzyme A
Hydroxymethyltransferase: α-Methylserine. *See* Methylserine hydroxymethyltransferase
Hydroxyphenylpyruvic acid oxidase: *p*-; quinones, reactivation ability, tyrosine oxidation system, liver, *Zannoni,* 1172
Hydroxypregnenolone: 17-; conversion, cortisol, human adrenal tumor, *Weliky and Engel,* 2089
Hydroxyproline: 3-; new amino acid of collagen, *Ogle, Arlinghaus, and Logan,* 3667
Formation, rat cartilage, *Daughaday and Mariz,* 2831
Ketoproline and, precursors, actinomycin, *Katz, Prockop, and Udenfriend,* 1585
Hydroxyproline—*Continued*
Hydroxystearic acids: Metabolism, yeast, *Light, Lennarz, and Bloch,* 1793
Hydroxysteroid dehydrogenase: 3β-; activity, C_{17}-hydroxylated Δ^5-pregnenes, C_{21}-hydroxylated Δ^5-pregnenes, *Berliner, Cazes, and Nabors,* 2478
17β-; purification, human placenta, *Jarabak, Adams, Williams-Ashman, and Talalay,* 345
—; steroid specificity, human placenta, *Adams, Jarabak, and Talalay,* 3069
—; transhydrogenase function, study, *Jarabak, Adams, Williams-Ashman, and Talalay,* 345
Hydroxystyrene(s): Formation, decarboxylation, 4-hydroxycinnamic acids, *Aerobacter,* enzyme reactions, phenolic compounds, *Finkle, Lewis, Corse, and Lundin,* 2926
Hydroxytryptamine: 5-; Effect, phosphofructokinase, *Mansour and Mansour,* 629
Hypocholesteremic activity: Antigoitrogenic and calorigenic activities and, aliphatic, alicyclic, and aromatic ethers of 3,5-diiodotyrosine, rat, thyroxine analogues, *Jorgensen, Lehman, Greenberg, and Zenker,* 3832
Hypercholesterolemia: Phosphatide-induced; mechanism, *Byers, Friedman, and Sugiyama,* 3375
Hypoglycemia: -Producing biguanide; action, oxidative phosphorylation, study, *Falcone, Mao, and Shrago,* 904
-Producing sulfonylurea; action, oxidative phosphorylation, study, *Falcone, Mao, and Shrago,* 904

I

Imidazolytic process(es): Pyrophosphate biosynthesis, 5′-inosinic acid, 5′-adenylic acid, *Alivisatos, La Mantia, Ungar, and Matijevitch,* 1212
Iminodipeptidase: (Prolinase); comparison, proline iminopeptidase, purification, *Sarid, Berger, and Katchalski,* 2207
Proline. *See* Proline iminopeptidase
Immunochemical analysis: Tyrosine-α-ketoglutarate transaminase, induction, rat liver, *Kenney,* 1610
Immunochemistry: Enzymatic synthesis and, *N*-acetylglucosaminylribitol linkages, teichoic acids, *Staphylococcus aureus* strains, *Nathenson and Strominger,* PC3839
Incisor(s): Eruption; eyelid opening and, mouse submaxillary gland protein isolation, *Cohen,* 1555
Induction: Lysogenic; effect on deoxyribonucleases of *Escherichia coli* K12λ, *Weissbach and Korn,* PC3312
Substrate and hormonal enzyme; increased titers, liver tryptophan pyrrolase, immunochemical evidence, *Feigelson and Greengard,* 3714
Inhibition: Competitive, α-chymotrypsin, by diethyl ether, alcohols, *Miles, Morey, Crain, Gross, San Julian, and Canady,* 1319
—; dibasic amino acid transport, rat kidney, *Rosenberg, Downing, and Segal,* 2265
Cytochrome *c* oxidase, cytochrome *c*, *McGuinness and Wainio,* 3273
Feedback, control, enzymology, *Gerhart and Pardee,* 891
—; purine biosynthesis, ascites tumor cells, *Henderson,* 2631
Kinetics; lipoprotein lipase, polyanions and polycations, *Korn,* 3423
Peptide, antibody, performic acid-oxidized ribonuclease, antigenic structure, studies, *Brown,* 1162
Reactions; adenosine triphosphate transphosphorylases, *Mahowald, Noltmann, and Kuby,* 1535
Substrate; reversible inhibitors, acetylcholinesterase, *Wilson and Alexander,* 1323
Trypsin, chymotrypsin, plasmin, inhibitor, sheep serum, *Martin,* 2099
Inhibitor(s): Competitive; studies, carboxypeptidase A binding, *Fujioka and Imahori,* 2804
Irreversible; acetylcholinesterase, methanesulfonic acid esters, *Kitz and Wilson,* 3245
Isoserine and, action, serine metabolism, *Leibman and Fellner,* 2213
Natural fluorescent; separation of thymidylate synthetase from, purification, enzymatic synthesis of thymidylate, *Friedkin, Crawford, Donovan, and Pastore,* 3811
Purine biosynthesis, hadacidin, *Shigeura and Gordon,* 1932
Reversible, substrate inhibition, ace-

Inhibitor(s)—*Continued*
tylcholinesterase, *Wilson and Alexander*, 1323
Sheep serum, trypsin, chymotrypsin, plasmin inhibition, *Martin*, 2099
Inorganic phosphate: Radioactive; incorporation, phospholipid, ouabain, effect, *Nicholls, Kanfer, and Titus*, 1043
Inorganic pyrophosphate: Adenosine 3′,5′-phosphate and, formation, adenosine triphosphate, adenyl cyclase, *Rall and Sutherland*, 1228
Inosinic acid: 5′-; 5′-adenylic acid and, pyrophosphate biosynthesis, imidazolytic processes, *Alivisatos, La-Mantia, Ungar, and Matijevitch*, 1212
Insulin: Acid-induced transformation products, separation and characterization, paper electrophoresis, 7 M urea, *Sundby*, 3406
Action, amino acid uptake, *Akedo, and Christensen*, 118
— mechanism, disulfide-sulfhydryl interchange, *Carlin and Hechter*, PC1371
-Degrading enzyme; action, *Tomizawa*, 428
Digestion with trypsin, loss of biological activity during, *Carpenter and Baum*, 409
Fractions, amide content, *Carpenter and Chrambach*, 404
-Like actions, ribonucleic acid, adenylic acid, adenosine, *Dole*, 2758
Interchange: Disulfide-sulfhydryl. *See under* Disulfide(s)
Intermediate(s): Biosynthetic, malonate, *Penicillium urticae, Bu'Lock, Smalley, and Smith*, 1778
Glycolaldehyde-phosphoketolase; formation and isolation, *Goldberg and Racker*, PC3841
Probable, oxidative phosphorylation, digests, identification, phosphohistidine, *Boyer, DeLuca, Ebner, Hultquist, and Peter*, PC3306
Tryptophan catabolism, mammalian liver, *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi*, PC2043
Intestinal wall: Guinea pig, triparanol, detection, sterol, probable structure of $\Delta^{5,7,24}$-cholestatrien-3β-ol, *Frantz, Sanghvi, and Clayton*, 3381
Intestine: Purine ribonucleotide digestion, absorption, studies *in vitro*, *Wilson and Wilson*, 1643
Inulin: Inulinase action pattern, *Saccharomyces fragilis, Snyder and Phaff*, 2438
Inulin—*Continued*
charomyces fragilis, Snyder and Phaff, 2438
Inulinase: *Saccharomyces fragilis*, action pattern, inulin, *Snyder and Phaff*, 2438
Invertebrates: Marine; carbon dioxide fixation, main pathway, flatworms, *Hammen and Lum*, 2419
Iodide peroxidase: Thyroid, reversible dissociation into apoenzyme and prosthetic group, *Alexander and Corcoran*, 243
Iodination: Thyroglobulin, properties, *Edelhoch*, 2778
Ion(s): Carbonate; role, equilibration studies, human bone powder, *MacGregor and Nordin*, 2704
Chloride; binding to ribonuclease, *Saroff and Carroll*, 3384
Hydrogen, metmyoglobin reactivity toward, *Breslow and Gurd*, 371
Metal, complexing effect, *Cohn and Hughes*, 176
Sulfate; binding to ribonuclease, *Saroff and Carroll*, 3384
Ionic strength: Actomyosin, interaction, adenosine triphosphate, clearing and superprecipitation, adenosine triphosphatase, birefringence, flow studies, *Maruyama and Gergely*, 1100
Iproniazid: Phenylcyclopropylamines and, monoamine oxidase inhibition, amine oxidases, *Zeller and Sarkar*, 2333
Iris: Bulbs, isolation, γ-L-glutamyl-β-alanine, *Morris, Thompson, Asen, and Irreverre*, 2180
Isethionic acid: (2-Hydroxyethanesulfonic acid); isolation, dog heart, *Welty, Read, and Shaw*, 1160
Taurine and, synthesis, dog heart, *Read and Welty*, 1521
Isocitrate lyase: Malate synthase and, *Hydrogenomonas facilis, McFadden and Howes*, 1410
Isocitric acid: Isomers, suggested new nomenclature, *Vickery*, 1739
Isoleucine: Formation, β-methylaspartic acid, *Escherichia coli, Abramsky, Rowland, and Shemin*, PC265
Isomer(s): Isocitric acid, suggested new nomenclature, *Vickery*, 1739
Isomerase: Ketosteroid. *See* Ketosteroid isomerase
Triosephosphate. *See* Triosephosphate isomerase
Isomerization: Acid; human mercaptalbumin, moving boundary electrophoresis behavior, *Clark, Rachinsky, and Foster*, 2509
Isomerization—*Continued*
Isooctyl: Side chain, cholestanetriol oxidation, propionic acid formation, *Suld, Staple, and Gurin*, 338
Isoserine: Other inhibitors and, action, serine metabolism, *Leibman and Fellner*, 2213
Isotope(s): Tracer studies, rhodanese action, *Westley and Nakamoto*, 547

K

Ketoglutarate: α-; Pyridoxamine transamination, *Wada and Snell*, 127
α-Hydroxy-γ-; γ-hydroxyglutamic acid conversion to, glutamic-aspartic transaminase of rat liver, *Goldstone and Adams*, 3476
Keto-L-gulonic acid: β-; intermediate, ascorbic acid metabolism, *Volk and Larsen*, 2454
Ketoproline: Hydroxyproline and, precursors, actinomycin, *Katz, Prockop, and Udenfriend*, 1585
Ketoproline reductase: 4-; purification, properties, *Smith and Mitoma*, 1177
Ketosteroid(s): Δ^4-3-; Structure, spectrophotometric interaction, human serum albumin, steroid-protein interactions, *Westphal and Ashley*, 2763
18-Hydroxy-17-; isolation and characterization, *Fukushima, Bradlow, Hellman, and Gallagher*, 3359
Urinary glucuronosides, chemical cleavage studies, *Jacobsohn and Lieberman*, 1469
Ketosteroid isomerase: Preparation, properties, *Kawahara, Wang, and Talalay*, 1500
Kidney(s): β-Glucuronidase, purification and properties, *Pettengill and Fishman*, 24
Mitochondria, calcium release, vitamin D action, *Engstrom and DeLuca*, PC974
Rat; competitive inhibition, dibasic amino acid transport, *Rosenberg, Downing, and Segal*, 2265
—; mitochondria, Ca^{++} uptake, dependence on respiration and phosphorylation, *Vasington and Murphy*, 2670
—; nitrogen-containing diets, transamidinase activities, *Van Pilsum and Canfield*, 2574
Kinase: Creatine. *See* Creatine kinase
Fuculose. *See* Fuculose kinase
Pyruvate. *See* Pyruvate kinase

Kinetic analysis: Glutamic oxaloacetate transaminase mechanism, *Velick and Vavra,* 2109
Kinetic model(s): Peptidase and esterase activities, effects, alcohol, kinetics of carboxypeptidase B activity, *Folk, Wolff, Schirmer, and Cornfield,* 3105
Kinetic parameters: Carboxypeptidase B, cobalt and cadmium enzymes, *Folk, Wolff, and Schirmer,* 3100
— activity, *Wolff, Schirmer, and Folk,* 3094
pH dependence, threonine dehydrase, *Davis and Metzler,* 1883
Kinetics: Carboxypeptidase B activity, effects, alcohol, peptidase and esterase activities, kinetic models, *Folk, Wolff, Schirmer, and Cornfield,* 3105
—, kinetic parameters, *Wolff, Schirmer, and Folk,* 3094
—, —, cobalt and cadmium enzymes, *Folk, Wolff, and Schirmer,* 3100
Catalase synthesis and destruction *in vivo, Price, Sterling, Tarantola, Hartley, and Rechcigl,* 3468
Inhibition, catalase, 3-amino-1,2,4-triazole, hydrogen peroxide, catalase-hydrogen peroxide Complex I hydrogen donors, *Margoliash and Schejter,* 2359
—, lipoprotein lipase, polyanions and polycations, *Korn,* 3423
Primed deoxynucleotide polymers, and synthesis *de novo,* enzymatic synthesis, deoxyribonucleic acid, *Radding and Kornberg,* 2877
Yeast D-lactic cytochrome *c* reductase, integrated velocity equations, *Graae and Nygaard,* 3255
Kinetic studies: D-Alanyl-D-alanine synthetase, enzymatic synthesis, D-alanyl-D-alanine, *Neuhaus,* 3128
Brain hexokinase reaction, *Fromm and Zewe,* 1661
Hepatic triphosphopyridine nucleotide-cytochrome *c* reductase, and isolation and characterization, *Phillips and Langdon,* 2652
Rabbit muscle lactate dehydrogenase, *Zewe and Fromm,* 1668
Rat liver glutamic-alanine transaminase, *Hopper and Segal,* 3189
Yeast hexokinase, *Fromm and Zewe,* 3027
Kinosynthetase: *N*-(5-amino-1-ribosyl-4-imidazolylcarbonyl) - L - aspartic acid 5′-phosphate. *See* Aspartic acid 5′-phosphate kinosynthetase
Kynurenic acid: Quinaldic and xanthurenic acids and, metabolism, rabbit, *Kaihara and Price,* 1727

L

Label(s): H^3 and C^{14}; relative retention, nucleosides, nucleic acids, *Neurospora, Fink and Fink,* 2889
Labeling: Hexosamine and collagen, normal bone, bone matrix biosynthesis *in vitro, Deiss, Holmes, and Johnston,* 3555
Lactate: -Buffered glycerol medium; cellulose synthesis, *Acetobacter acetigenum,* formation of D-glucose, cellobiose, other saccharides, *Ramamurti and Jackson,* 2434
Lactate dehydrogenase: Rabbit muscle; kinetic studies, *Zewe and Fromm,* 1668
Lactic dehydrogenase: Physicochemical properties, *Millar,* 2135
Preparation, beef heart, *Schwert, Millar, and Takenaka,* 2131
Lactobacillus arabinosus: Asparagine biosynthesis, control by asparagine, enzyme inhibition, repression, *Ravel, Norton, Humphreys, and Shive,* 2845
Lactobacillus leichmannii: Vitamin B_{12}-deficient cells, biosynthesis, thymine and formyltetrahydrofolate, *Roberts and Nichol,* 2278
Lactobionic acid: Enzymic formation, from lactose, *Nishizuka and Hayaishi,* 2721
Lactoglobulin: β-; and γ-globulin, conformation, ethylene glycol, effect, *Tanford, Buckley, De, and Lively,* 1168
Lactose(s): Lactobionic acid, enzymic formation, *Nishizuka and Hayaishi,* 2721
Synthesis, particulate enzyme preparations, mammary glands, *Watkins and Hassid,* 1432
—, precursors, labeling, glycerol-1,3-C^{14}, glucose-2-C^{14}, *Hansen, Wood, Peeters, Jacobson, and Wilken,* 1034
Leaf: Soluble protein, correlation with chlorophyll accumulation, *Kupke,* 3287
Lepidoptera: Silkworm *Bombyx mori* and, D-serine in blood, *Srinivasan, Corrigan, and Meister,* PC3844
Lesion(s): Atheromatous, rabbit, cholesterol flux, quantitative aspects, *Newman and Zilversmit,* 2078
Lespedeza: Nodules, ferrihemoprotein from, *Thorogood,* PC267
Leucine: Activation and transfer, carrier ribonucleic acid, ribosomes, species specificity, *Rendi and Ochoa,* 3707
Light: -Dependent, adenosine triphosphatase, chloroplasts, *Avron,* 2011
Intensity, effect on triphosphopyridine nucleotide reduction, adenosine triphosphate formation, and carbon dioxide assimilation, spinach chloroplasts, *Turner, Black, and Gibbs,* 577
Lipase: Lipoprotein. *See* Lipoprotein lipase
Lipid(s): Organ, tumor; immunochemical studies, cytolipin H, preparation, *Rapport, Schneider, and Graf,* 1056
Lipoprotein lipase: Kinetics, inhibition, polyanions and polycations, *Korn,* 3423
Lipoyl dehydrogenase: Free flavins and, charge transfer complexes, *Massey and Palmer,* 2347
Relation of function and structure, *Massey, Hofmann, and Palmer,* 3820
Liver: Ammonia and glutamic acid metabolism, and brain, metabolic compartments, *Berl, Takagaki, Clarke, and Waelsch,* 2562
α-Amylase; action mechanism, *Olavarria and Torres,* 1746
Avian; glycine metabolism, *Richert, Amberg, and Wilson,* 99
Beef; glutamic dehydrogenase, dissociation, effect, pH, other variables, *Frieden,* 2396
—; glutathione-insulin transhydrogenase, properties, *Tomizawa,* 3393
—; insulin-degrading enzyme from, *Tomizawa,* 428
Cell fractions; rat serum albumin, biosynthesis, occurrence, properties, *Peters,* 1181
Chicken; folates, distribution, folic acid derivatives, natural material, *Noronha and Silverman,* 3299
Fatty; etiology, relationship, carbon tetrachloride action, transport and metabolism of triglycerides and fatty acids in isolated perfused rat liver, *Heimberg, Weinstein, Dishmon, and Dunkerley,* 3623
β-Glucuronidase, purification and properties, *Pettengill and Fishman,* 24
Glutamic-alanine transaminase, normal and corticoid-treated rats, purification, properties, *Segal, Beattie, and Hopper,* 1914

Liver—*Continued*
Hexose synthesis, aspartate-3-C^{14}, phosphoenolpyruvate source, *Bloom and Foster*, 2744
Mammalian, tryptophan catabolism, intermediates, *Gholson, Nishizuka, Ichiyama, Kawai, Nakamura, and Hayaishi*, PC2043
Microsomes, cytochrome in, *Omura and Sato*, PC1375
Monkey; purification, properties, 2′-deoxyribosyl 4-aminopyrimidone-2,5′-phosphate aminohydrolase, enzymatic aminohydrolysis, 4-aminopyrimidine deoxyribonucleotides, *Scarano, Bonaduce, and De Petrocellis*, 3742
Preparations, cardiac muscle and, adenosine 3′,5′-phosphate formation by, catecholamines, choline esters, effect, adenyl cyclase, *Murad, Chi, Rall, and Sutherland*, 1233
Propionate metabolism, lactating rat, and mammary gland, *Katz and Kornblatt*, 2466
Rabbit; aldehyde dehydrogenase, steroid hormone mechanism, *Maxwell*, 1699
—; microsomes, solubilization, partial purification, glucuronyl transferase, *Isselbacher, Chrabas, and Quinn*, 3033
—; soluble ribonucleic acid, studies, frequencies, base sequences, specific enzymatic hydrolysis, *McCully and Cantoni*, 3760
Rat; creatine synthesis rate, *Gerber, Gerber, Koszalka, and Miller*, 2246
—; deoxyribose phosphate aldolase, polycarboxylic acid activation, *Jiang and Groth*, 3339
—; enzymes, hydrolysis, long chain fatty acid esters of cholesterol, *Deykin and Goodman*, 3649
—; fructose metabolism *in vivo*, *Muntz and Vanko*, 3582
—; glucocorticoid-induced increase, glutamic-alanine transaminase activity, basis, evidence for increase in enzyme level, *Segal, Rosso, Hopper, and Weber*, PC3303
—; glutamic-alanine transaminase, kinetic studies, *Hopper and Segal*, 3189
—; glutamic-aspartic transaminase, conversion, γ-hydroxyglutamic acid to α-hydroxy-γ-ketoglutarate, *Goldstone and Adams*, 3476
—; hydrocortisone effect, tyrosine-α-ketoglutarate transaminase and tryptophan pyrrolase activities, *Goldstein, Stella, and Knox*, 1723
Rat; isolated perfused, transport and metabolism of triglycerides and fatty acids, carbon tetrachloride action, relationship, etiology, fatty liver, *Heimburg, Weinstein, Dishmon, and Dunkerley*, 3623
—; levels, urea cycle enzymes, effects, fasting, protein-free diets, *Schimke*, 1921
—; metabolism, D-glucosamine-1-C^{14}, *N*-acetyl-D-glucosamine-1-C^{14}, hexosamine, *McGarrahan and Maley*, 2458
—; microsomes, ribonucleoprotein, physicochemical properties, *Hamilton, Cavalieri, and Petermann*, 1155
—; —, thyroxine degradation products, *Wynn and Gibbs*, 3499
—; mitochondria, cholestanetriol oxidation and propionic acid formation, *Suld, Staple, and Gurin*, 338
—; —, proline oxidation, interconversion, glutamic acid and proline, *Johnson and Strecker*, 1876
—; normal and riboflavin-deficient, flavin nucleotides and folic acid in, *Miller, Poncet, and Takacs*, 968
—; threonine and serine dehydrase activities, studies, nature, inducibility, and assay, *Goldstein, Knox, and Behrman*, 2855
—; thyroxine-degrading system, reaction conditions, study, thyroxine degradation, *Wynn, Gibbs, and Royster*, 1892
—; tyrosine-α-ketoglutarate transaminase induction, evidence for increase in rate of enzyme synthesis, *Kenney*, 3495
Regenerating, rat, metabolic stability, deoxyribonucleic acid phosphorus, *Ives and Barnum*, 2604
—, —, radiochemical equilibration, phosphorus-containing precursors, deoxyribonucleic acid, *Ives and Barnum*, 2559
Regeneration rate and uracil-catabolizing enzymes, relation, *Fritzson*, 150
Tryptophan pyrrolase, activity, regulation, *Feigelson and Greengard*, 1908
—, increased titers, substrate and hormonal enzyme induction, immunochemical evidence, *Feigelson and Greengard*, 3714
Tryptophan pyrrolase, purification, properties, *Greengard and Feigelson*, 1903
Tyrosine-α-ketoglutarate transaminase induction, immunochemical analysis, *Kenney*, 1610
—, purification, antitransaminase preparation, *Kenney*, 1605
Tyrosine oxidation system, quinones, reactivation ability, *p*-hydroxyphenylpyruvic acid oxidase, *Zannoni*, 1172
Lyase: Isocitrate. *See* Isocitrate lyase
Lymph node(s): Cells; amino acid transport, *Helmreich and Kipnis*, 2582
—, isolated, γ-globulins, secretion mechanism, observations, *Helmreich, Kern, and Eisen*, 1925
Lysine: L-; enzymatic addition, and L-alanine, D-glutamic acid, enzymatic synthesis, peptide, bacterial uridine nucleotides, *Ito and Strominger*, 2689
Fermentation, fatty acids, ammonia, cobamide coenzyme-dependent process, *Stadtman*, PC2409
-Requiring yeast mutant, glutaric acid accumulation, *Mattoon and Haight*, 3486
Lysophosphatidic acid: Biosynthesis, monoglyceride, adenosine triphosphate, *Pieringer and Hokin*, 653
Phosphatidic acid biosynthesis, *Pieringer and Hokin*, 659
Lysozyme: Physical studies, characterization, *Sophianopoulos, Rhodes, Holcomb, and Van Holde*, 1107
Lyxose: L-; degradation pathway, *Aerobacter aerogenes, Anderson and Wood*, 296

M

Macroglobulin: Anamalous; myeloma and macroglobulinemic sera, chromatographic study, *Fahey*, 440
Magnesium: Role, superprecipitation, myosin B, *Maruyama and Watanabe*, 3437
Malate synthase: Isocitrate lyase and, *Hydrogenomonas facilis, McFadden and Howes*, 1410
Malformation(s): Congenital, experimental, biochemical study, *Miller, Poncet, and Takacs*, 968
Malonate: Biosynthetic intermediate, *Penicillium urticae, Bu'Lock, Smalley, and Smith*, 1778

Mammal(s): Cell cultures, resistance to glucose, study, *Barban*, 291
Octopamine identification in, *Kakimoto and Armstrong*, 422
Mammary gland(s): Guinea pig, bovine; particulate enzyme preparations, lactose synthesis, *Watkins and Hassid*, 1432
Propionate metabolism, lactating rat, and liver, *Katz and Kornblatt*, 2466
Mannitol 1-phosphate dehydrogenase: D-; D-Sorbitol 6-phosphate dehydrogenase and, in *Aerotobacter aerogenes*, *Liss, Horwitz, and Kaplan*, 1342
Mannose: 6-Deoxy-D-; 6-deoxy-D-talose and, isolation, polysaccharide, gram-negative bacterium, *Markovitz*, 1767
Material(s): Biological; adenosine 3′,5′-phosphate in, human urine, cyclic 3′,5′-nucleotide phosphodiesterase purification, properties, use, *Butcher and Sutherland*, 1244
Natural; distribution, folic acid derivatives, chicken liver folates, *Noronha and Silverman*, 3299
Matrix: Bone; biosynthesis *in vitro*, effects, parathyroid hormone, *Johnston, Deiss, and Miner*, 3560
—; —, labeling of hexosamine and collagen, normal bone, *Deiss, Holmes, and Johnston*, 3555
Mechanism(s): Action. *See* Action mechanism
Glutamic oxaloacetate transaminase, kinetic and equilibrium analysis, *Velick and Vavra*, 2109
Reaction. *See* Reaction mechanism
Tricarboxylic acid cycle regulation, fatty acid synthesis, *Martin and Vagelos*, 1787
Medulla: Adrenal; uptake, catecholamines, *Kirshner*, 2311
Melilotus alba: Coumarin biosynthesis, *Stoker and Bellis*, 2303
Dihydrocoumarin hydrolase, purification, properties, aromatic compounds metabolism, higher plants, *Kosuge and Conn*, 1653
Membrane(s): Bacterial cell, polynucleotide phosphorylase, *Abrams and McNamara*, 170
Protoplast; *Streptococcus*; hyaluronic acid synthesis, *Markovitz and Dorfman*, 273
Mercaptalbumin: Human; acid isomerization, moving boundary electrophoresis behavior, *Clark, Rachinsky, and Foster*, 2509
Mercaptalbumin—*Continued*
Human; — titration behavior, re-examination, changes, amphoteric properties, N–F transformation, *Foster and Clark*, 3163
Metabolic function: Virus-induced acquisition, deoxycytidylate hydroxymethylase purification, properties, origin, studies, *Pizer and Cohen*, 1251
Metabolite(s): 7-H^3-epinephrine; biliary and urinary excretion, rat, *Hertting and LaBrosse*, 2291
Uptake, studies, serine-glycine *Escherichia coli* auxotrophs, *Levine and Simmonds*, 3718
Urinary; isolation, 17-methyltestosterone, *Rongone and Segaloff*, 1066
Metal: Binding, catalytic activity, bovine carbonic anhydrase, *Lindskog and Malmström*, 1129
Content; and mitochondrial function, carbon tetrachloride poisoning, *Reynolds, Thiers, and Vallee*, 3546
Methanesulfonic acid: Esters; irreversible inhibitors of acetylcholinesterase, *Kitz and Wilson*, 3245
Methionine: Activation, transmethylation, *Mudd*, PC1372
Pyridoxal phosphate-dependent oxidative decarboxylation by peroxidase, characteristics and properties of reaction, *Mazelis*, 104
—, identification of 3-methylthiopropionamide as reaction product, *Mazelis and Ingraham*, 109
Residues, bovine pancreatic ribonuclease, peptide bonds, nonenzymatic cleavage, *Gross and Witkop*, 1856
Methosulfate: Phenazine. *See* Phenazine methosulfate
Methylaspartic acid: β-; isoleucine formation from, *Abramsby, Rowland, and Shemin*, PC265
Methylation: *N*-; carnosine, anserine, enzymatic synthesis, skeletal muscle, *McManus*, 1207
Methylbarbituric acid: 5-; nonenzymatic decomposition, *Doumas and Biggs*, 2306
Methylbis(β-chloroethyl)amine: Effect, diphosphopyridine nucleotidase activity, Ehrlich ascites cells, role, glycolysis, *Green and Bodansky*, 1752
Methyldihydrofolate: 5-; oxidation product of 5-methyltetrahydrofolate, characterization and properties, naturally occurring forms of folic acid, *Donaldson and Keresztesy*, 3815
Methyldihydrofolate—*Continued*
Methylenetetrahydrofolic acid: Enzymatic conversion, prefolic A-methyltetrahydrofolate, *Donaldson and Keresztesy*, 1298
Methylenetetrahydrofolic dehydrogenase: 5,10-; bakers' yeast, purification, properties, *Ramasastri and Blakley*, 1982
Methyl group(s): *N*-; mitochondrial oxidation, coupled flavoenzymes in, purification, electron transfer flavoprotein, *Frisell, Cronin, and Mackenzie*, 2975
Thymidylate; transfer of tritium to from tetrahydrofolate, enzymatic synthesis of thymidylate, *Pastore and Friedkin*, 3802
Methyl-α-hydroxy-α-ketoglutaric aldolase: γ-; purification, properties, *Shannon and Marcus*, 3342
—; studies with pyruvate-C^{14}, *Marcus and Shannon*, 3348
Methylpropanol: 2-Amino-2-; Effect, phospholipid metabolism, rat liver, *Longmore and Mulford*, 694
Methylserine: α-; metabolism, α-methylserine hydroxymethyltransferase, *Wilson and Snell*, 3171
—; —, stereospecificity, α-methylserine hydroxymethyltransferase, *Wilson and Snell*, 3180
Methylserine hydroxymethyltransferase: α-; metabolism, α-methylserine, *Wilson and Snell*, 3171
—; stereospecificity, metabolism, α-methylserine, *Wilson and Snell*, 3180
Methylstearic acid: *Mycobacterium phlei*, mass spectrometric analysis, *Ryhage*, 670
10-; biosynthesis, *Mycobacterium phlei*, *Lennarz, Scheuerbrandt, and Bloch*, 664
Methyltestosterone: 17-; isolation, urinary metabolites, *Rongone and Segaloff*, 1066
Methyltetrahydrofolate: 5-; oxidation product, 5-methyldihydrofolate, characterization and properties, naturally occurring forms of folic acid, *Donaldson and Keresztesy*, 3815
Prefolic A-; enzymatic conversion, from methylenetetrahydrofolic acid, *Donaldson and Keresztesy*, 1298

Methylthioadenosine: 5′-; *S*-adenosylhomocysteine and, hydrolytic nucleosidase, *Duerre,* 3737
Methylthiopropionamide: 3-; identification, methionine decarboxylation, *Mazelis and Ingraham,* 109
Methyluracil: *N*-; crystal and molecular structure, *Green, Mathews, and Rich,* PC3573
Methylvalerate: α-; formation pathway, *Ascaris lumbricoides, Saz and Weil,* 2053
Metmyoglobin: Sperm whale, reactivity toward hydrogen ions and nitrophenyl acetate, *Breslow and Gurd,* 371
Mevalonic acid: Sclareol, β-sitosterol, oleanic acid biosynthesis, *Nicholas,* 1481
Sitosterol, terpenoid substances, *Ocimum basilicum,* biosynthesis, *Nicholas,* 1484
Mircococcus aerogenes: Formate-activating enzyme, reaction mechanism, *Whiteley and Huennekens,* 1290
Micrococcus lysodeikticus: Reconstitution, oxidative phosphorylation, *Ishikawa and Lehninger,* 2401
Microorganism(s): Unsaturated fatty acids, *Scheuerbrandt and Bloch,* 2064
Microsome(s): Liver; cytochrome, *Omura and Sato,* PC1375
Rabbit liver; solubilization, partial purification, glucuronyl transferase, 3033
—; ribonucleoprotein, physicochemical properties, *Hamilton, Cavalieri, and Petermann,* 1155
—; thyroxine degradation products, *Wynn and Gibbs,* 3499
Mitochondria: Fluorescence, pyridine nucleotides, *Avi-Dor, Olson, Doherty, and Kaplan,* 2377
Function; and metal content, carbon tetrachloride poisoning, *Reynolds, Thiers, and Vallee,* 3546
Heart; heart muscle preparation, partition of flavins, *King, Howard, Wilson, and Li,* 2941
—; reduced nicotinamide adenine dinucleotide-cytochrome *c* reductases, comparison, formation, respiratory chain-linked dehydrogenase, *Watari, Kearney, Singer, Basinski, Hauber, and Lusty,* PC1731
Isolated; pyruvate utilization, metabolism, ascitic mammary carcinoma, Walker rat, *Hellerman, Reiss, and Gey,* 997
Mitochondria—*Continued*
Kidney, calcium release, vitamin D action, *Engstrom and DeLuca,* PC974
Metabolism, fatty acid esters of carnitine, carnitine in intermediary metabolism, *Bremer* 3628
Pigeon heart; adenosine diphosphate supplements, activation and inhibition of succinate oxidation, *Chance and Hagihara,* 3540
Rat brain; adenosine triphosphatase activity, *Tanaka and Abood,* 2999
— kidney; Ca^{++} uptake, dependence on respiration and phosphorylation, *Vasington and Murphy,* 2670
— liver; cholestanetriol oxidation and propionic acid formation, *Suld, Staple, and Gurin,* 338
—; proline oxidation, interconversion, glutamic acid and proline, *Johnson and Strecker,* 1876
—; water uptake and extrusion, effect, thiols and disulfides, *Neubert and Lehninger,* 952
Thyroidectomized rats, oxidative phosphorylation, thyroxine, influence, *Bronk and Bronk,* 897
Reversible acetylation, carnitine, intermediary metabolism, *Bremer,* 2228
Swelling; electron transport and, reversal, states, *Packer,* 1327
Water extrusion, heat-labile factor required, *Lehninger,* 946
Mold(s): Tetronic acid biosynthesis, formation, carlosic and carolic acids, *Penicillium charlesii, Bentley, Bhate, and Keil,* 859
—, —, penicillic acid, *Penicillium cyclopium, Bentley and Keil,* 867
Monoamine oxidase: Copper, prosthetic groups, plasma monoamine oxidase, *Yamada and Yasunobu,* 3077
Glucose oxidation, *Barondes,* 204
Inhibition, phenylcyclopropylamines, iproniazid, amine oxidases, *Zeller and Sarnar,* 2333
Plasma; copper, prosthetic groups, *Yamada and Yasunobu,* 3077
—; purification, crystallization, properties, *Yamada and Yasunobu,* 1511
Monofluorocitrate: Enzymatic synthesis, β-fluoro-oxaloacetate, *Fanshier, Gottwald, and Kun,* 3588
Monoglyceride(s): Esterification, palmityl coenzyme A, intestinal epithelial subcellular fractions, *Senior and Isselbacher,* 1454
Monoglyceride(s)—*Continued*
Lysophosphatidic acid, biosynthesis, *Pieringer and Hokin,* 653
Monoiodotyrosine: Synthesis, enzyme systems, studies, particulate system, *Witonsky and Kirkwood,* 2892
Monomer: Interconversion with polymers, horse heart cytochrome *c, Margoliash and Lustgarten,* 3397
Mononucleotide(s): Ribonucleic acid digests, *Rushizky and Sober,* 834
Monophosphate: Cytidine. *See* Cytidine monophosphate
Monosaccharide: Sequence, fetuin, study, *Spiro,* 646
Mucoprotein(s): Lacrimal; nature, exophthalmos-producing substance, *Brunish,* 2816
Urinary, normal human, amino acid composition, *Maxfield and Stefanye,* 2522
Mung bean: Seedlings; *b*-type cytochromes, studies, properties, *b*-555 and *b*-561, *Shichi and Hackett,* 2959
—; —, —, purification, *b*-555 and *b*-561, *Shichi and Hackett,* 2955
Sprouts, nuclease from, *Sung and Laskowski,* 506
Muscle: Beef heart, cytochrome oxidase, green heme, oxidation, properties, *Caughey and York,* PC2414
Cardiac; preparations, liver and, adenosine 3′,5′-phosphate formation by, catecholamines, choline esters, effect, adenyl cyclase, *Murad, Chi, Rall, and Sutherland,* 1233
Dystrophic, γ-myosin, physicochemical properties, *Kay and Pabst,* 727
Flight; hydrogen transport pathways, oxidation, extramitochondrial reduced diphosphopyridine nucleotide, *Sacktor and Dick,* 3259
Hexose synthesis, aspartate-3-C^{14}, phosphoenolpyruvate source, *Bloom and Foster,* 2744
Rabbit; D-glyceraldehyde 3-phosphate dehydrogenase —SH groups, interaction, oxidized glutathione, cystamine monosulfoxide, tetrathione and, *Pihl and Lange,* 1356
—; lactate dehydrogenase, kinetic studies, *Zewe and Fromm,* 1668
Sartorius; frog, glucose uptake, effect, anaerobiosis, tissue permeability studies, *Özand, Narahara, and Cori,* 3037
Skeletal; anserine enzymatic syn-

Muscle—*Continued*
thesis, carnosine *N*-methylation, *McManus*, 1207
Skeletal; phosphorylase, immunological study, *Yunis and Krebs*, 34
Triosephosphate dehydrogenase inactivation, reduced diphosphopyridine nucleotide, physiological concentrations, *Tucker and Grisolia*, 1068
Muscular dystrophy: Increased lysozymal enzymes, vitamin E-deficient rabbits, *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday*, 2678
Mushroom(s): Common; phenolases, separation, purification, *Smith and Krueger*, 1121
Mycobacteria: Enzyme systems, inhibition, transglycosidase-catalyzed formation, trehalose 6-phosphate, *Goldman and Lornitzo*, 3332
Mycobacterium phlei: Enzymatic system, behavior, 6-chromanyl phosphate, vitamin $K_{1(20)}$, *Asano, Brodie, Wagner, Wittreich, and Folkers*, PC2411
Methylstearic acid, mass spectrometric analysis, *Ryhage*, 670
Oleic and 10-methylstearic acid biosynthesis, *Lennarz, Scheuerbrandt, and Bloch*, 664
Myoglobin(s): Comparative biochemistry, *Brown, Martinez, Johnstone, and Olcott*, 81
Human adult; characterization, *Perkoff, Hill, Brown, and Tyler*, 2820
Inhibition, cytochrome *c* reduction, *Fridovich*, 584
Levels; tissues, wild Peruvian rodents, high altitude, *Reynafarje and Morrison*, 2861
Sperm whale; titration, role of heme, *Breslow*, PC3308,
Myokinase: Amino acid composition, *Mahowald, Noltmann, and Kuby*, 1138
Myosin: Adenosine triphosphatase, active site, localization, one sulfhydryl group, *Sekine, Barnett, and Kielley*, 2769
γ-; Dystrophic muscle, physicochemical properties, *Kay and Pabst*, 727
Hydrolysis; oxygen exchange, evidence, *Levy, Ryan, Springhorn, and Koshland*, PC1730
Subunit polypeptide chains, dissociation, reassociation, *Young, Harrington, and Kielley*, 3116
Myosin A: -Adenosine triphosphatase; initial phase, possible phosphorylation of myosin A, *Tonomura, Kitagawa, and Yoshimura*, 3660
— and creatine kinase, coupled reaction, *Yagi and Mase*, 397
Binding to F-actin, *Tonomura, Tokura, and Sekiya*, 1074
Cardiac; adenosine triphosphatase activity, role of solvent-induced changes, *Brahms and Kay*, 3449
Possible phosphorylation, initial phase of myosin A-adenosine triphosphatase, *Tonomura, Kitagawa, and Yoshimura*, 3660
Myosin B: Superprecipitation, role of magnesium, *Maruyama and Watanabe*, 3437

N

Naphthol: 2-Amino-1-; Interaction, serum albumin and cytochrome *c*, related to effect on rat bladder, *Belman and Troll*, 746
Neisseria meningitidis: Biosynthesis, sialic acids, *Blacklow and Warren*, 3520
Enzyme, biosynthesis, cytidine 5′-monophospho-*N*-acetylneuraminic acid, *Warren and Blacklow*, 3527
Neurohormones: Effects, adenosine 3′,5′-phosphate formation, brain, other tissue preparations, adenyl cyclase, *Klainer, Chi, Freidberg, Rall, and Sutherland*, 1239
Neurolathyrism: β-Cyano-L-alanine, possible factor in, *Ressler*, 733
Neurospora: Nucleic acids, nucleosides, relative retention, H^3 and C^{14} labels, *Fink and Fink*, 2889
Neurospora crassa: Radiocarbon utilization, thymidine, other ribonucleic acid precursors, *Fink and Fink*, 2289
N–F transformation: Amphoteric properties, changes, re-examination of acid titration behavior of human mercaptalbumin, *Foster and Clark*, 3163
Nicotiana rustica: Pyrrolidine ring, nicotine, synthesis, *Wu, Griffith, and Byerrum*, 887
Nicotinamidase: Purification and properties, *Torula cremoris, Joshi and Handler*, 929
Nicotinamide: Metabolism, and nicotinic acid, ascites cells, *in vitro, Friedland, Fuller, and Dietrich*, 3829
Reduced ribosyl; oxidation, flavoprotein, purification, properties, *Liao, Dulaney, and Williams-Ashman*, 2981
Nicotinamide adenine dinucleotide: Analogues, preparation, properties, pentose and purine modifications, *Fawcett and Kaplan*, 1709
Nicotinamide adenine dinucleotide-cytochrome *c* reductases: Reduced; heart mitochondria, comparison, formation, respiratory-chain linked dehydrogenase, *Watari, Kearney, Singer, Basinski, Hauber, and Lusty*, PC1731
Nicotine: (−)-; Metabolism, demethylation in, *McKennis, Turnbull, Schwartz, Tamaki, and Bowman*, 541
Pyrrolidine ring, synthesis, C^{14}-labeled metabolites, *Nicotiana rustica, Wu, Griffith, and Byerrum*, 887
Nicotinic acid: Nicotinamide metabolism and, ascites cells, *in vitro. Friedland, Fuller, and Dietrich*, 3829
Nitrogen: Carbamyl; donor, enzymatic synthesis, citrulline, *Agaricus bisporus*, L-glutamine role, *Levenberg*, 2590
-Containing compounds, diets, rats, kidneys, transaminidase activities, *Van Pilsum and Canfield*, 2574
Liquid; CO_2 transfer to counting tubes without, determination, carbon, radioactivity, *Van Slyke and Plazin*, 3296
N—H-containing compounds, peptides, nucleotides, detection, paper chromatograms, new reagent, *Mazur, Ellis, and Cammarata*, 1619
Nitrogen mustard: Effect, diphosphopyridine nucleotidase activity, Ehrlich ascites cells, role, glycolysis, *Green and Bodansky*, 1752
Nitrophenyl acetate: *p*-; metmyoglobin reactivity toward, *Breslow and Gurd*, 371
Nodules: Ascitic; citrate formation, mammary carcinoma, Walker rat, pyruvate metabolism, *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber*, 992
Nomenclature: Suggested new, isocitric acid isomers, *Vickery*, 1739
Norleucine: dizao-oxo-; inhibition mechanism, wild type and diazo-oxo-norleucine-resistant *Escherichia coli, Tomisek and Reid*, 807
Nuclear magnetic resonance: Studies, proteins, *Kowalsky*, 1807

Nuclease: Micrococcal; action mechanism, deoxyribonucleic acid, *Sulkowski and Laskowski,* 2620
Mung bean sprouts, *Sung and Laskowski,* 506
Nuclei: Thymus; enzyme, polyribonucleotide formation, adenosine triphosphate, polynucleotide nature, *Edmonds and Abrans,* 2636
Nucleic acid(s): Degradation products, separation, partition columns, *Hall,* 2283
Neurospora, nucleosides, relative retention, H^3 and C^{14} labels, *Fink and Fink,* 2889
Nucleosidase: Hydrolytic; *S*-adenosylhomocysteine, 5′-methylthioadenosine, *Duerre,* 3737
Pyridine. *See* Pyridine nucleosidase
Nucleoside(s): Coenzyme B_{12}, identification, *Hogenkamp, Ladd, and Barker,* 1950
Nucleic acids, *Neurospora,* relative retention, H^3 and C^{14} labels, *Fink and Fink,* 2889
Utilization, *Paracentrotus lividus* embryos, *Nemer,* 143
Nucleoside di- and triphosphates: Transphosphorylation, apatite crystals, *Krane and Glimcher,* 2991
Nucleoside phosphorylase: Activity, 1-β-D-arabinosyluracil, *Escherichia coli, Tono and Cohen,* 1271
Nucleoside triphosphate: Content, bacteriophages, *Wahl and Kozloff,* 1953
Nucleotidase: Diphosphopyridine. *See* Diphosphopyridine nucleotidase
Nucleotide(s): Adenine. *See* Adenine nucleotide
Cyclic 3′,5′-. *See* Cyclic 3′,5′-nucleotide
Diphosphopyridine. *See* Diphosphopyridine nucleotide
Flavin. *See* Flavin nucleotide(s)
Guanine. *See* Guanine nucleotide
Guanosine. *See* Guanosine nucleotide(s)
Interconversions, regulatory influence of deoxycytidine 5′-triphosphate and deoxythymidine 5′-triphosphate, deoxycytidylate deaminase, *Maley and Maley,* PC3311
Peptides, other N—H-containing compounds, detection, new reagent, paper chromatograms, *Mazur, Ellis, and Cammarata,* 1619
Purine. *See* Purine nucleotide(s)
Pyridine. *See* Pyridine nucleotide
Nucleotide(s)—*Continued*
Triphosphopyridine. *See* Triphosphopyridine nucleotide
Uridine. *See* Uridine nucleotide(s)
Neuroamine(s): Glucose oxidation, anterior pituitary, *Barondes,* 204
Neurospora: Mutants, D-amino oxidase-deficient, *Ohnishi, Macleod, and Horowitz,* 138

O

Octopamine: Identification, mammals, *Kakimoto and Armstrong,* 422
Ocimum basilicum: Terpenoid substances, β-sitosterol and, biosynthesis, mevalonic acid-2-C^{14}, *Nicholas,* 1485
Oleanolic acid: Sclareol, β-sitosterol and, biosynthesis, mevalonic acid-2-C^{14}, *Nicholas,* 1481
Oleic acid(s): Biosynthesis, *Mycobacterium phlei, Lennarz, Scheuerbrandt, and Bloch,* 664
Synthesis, *Barron and Stumpf,* PC613
Oligodeoxyribonucleotide: -Primed reactions, calf thymus polymerase, *Bollum,* 1945
Oligomycin: Action, inorganic orthophosphate-adenosine triphosphate and adenosine diphosphate-adenosine triphosphate exchange reactions, digitonin particles, *Kulka and Cooper,* 936
Oligonucleotide(s): Polynucleotide phosphorylase-catalyzed reactions, *Singer and Guss,* 182
Oligosaccharide(s): Unsaturated, formation, enzymatic, *Preiss and Ashwell,* 309
α_1 acid glycoprotein, human plasma, *Eylar and Jeanloz,* 622
Optical rotatory dispersion: Myosin A, effect of inorganic salt, *Tonomura, Sekiya, and Imamura,* 3110
Ouabain: Effect, P^{32} incorporation, phospholipid, *Nicholls, Kanfer, and Titus,* 1043
Oviduct: Hen; uridine diphosphate *N*-acetylglucosamine - 6 - phospho - 1 - galactose, *Gabriel and Ashwell,* 1400
—; uridine nucleotides, guanosine nucleotides, *Strominger,* 1388
Ovomucoid: Tyrosyls, location, chromophoric residues, proteins, solvent perturbation, *Herskovits and Laskowski,* 3418
Oxaloacetate: β-Fluoro-; Enzymatic synthesis, monofluorocitrate, *Fanshier, Gottwald, and Kun,* 3588
Oxaloacetate—*Continued*
Pyridoxamine transamination, *Wada and Snell,* 127
Oxidase(s): Aldehyde. *See* Aldehyde oxidase
Amine. *See* Amine oxidases
D-Amino acid. *See* Amino acid oxidase
An L-lactic; some properties, *Eichel and Rem,* 940
Anthranilate. *See* Anthranilate oxidase
Ascorbic acid. *See* Ascorbic acid oxidase
Benzoate. *See* Benzoate oxidase
Cytochrome. *See* Cytochrome oxidase(s)
Cytochrome *c*. *See* Cytochrome *c* oxidase
D-Galactose. *See* Galactose oxidase
L-α-Hydroxy acid. *See* Hydroxy acid oxidases
Hydroxyanthranilic acid. *See* Hydroxyanthranilic acid oxidase
p-Hydroxyphenylpyruvic acid. *See* Hydroxyphenylpyruvic acid oxidase
Monoamine. *See* Monoamine oxidase
Reduced diphosphopyridine nucleotide. *See* Diphosphopyridine nucleotide oxidase
Spermidine. *See* Spermidine oxidase
Xanthine. *See* Xanthine oxidase
Oxidation: Extramitochondrial reduced diphosphopyridine nucleotide, flight muscle, hydrogen transport pathways, *Sacktor and Dick,* 3259
Glucose, anterior pituitary, *Barondes,* 204
Mitochondrial; *N*-methyl groups, coupled flavoenzymes, purification, electron transfer flavoprotein, *Frisell, Cronin, and Mackenzie,* 2975
Periodate; α_1 acid glycoprotein, human plasma, *Eylar and Jeanloz,* 1021
Product; 5-methyldihydrofolate, 5-methyltetrahydrofolate, characterization and properties, naturally occurring forms of folic acid, *Donaldson and Keresztesy,* 3815
Reduced ribosyl nicotinamide, flavoprotein, purification, properties, *Liao, Dulaney, and Williams-Ashman,* 2981
Succinate; activation and inhibition, adenosine diphosphate supplements to pigeon heart mitochondria, *Chance and Hagihara,* 3540
Tyrosine; system of liver, quinones,

Oxidation—*Continued*
reactivation ability, *p*-hydroxyphenylpyruvic acid oxidase, *Zannoni*, 1172
Oxide: Trimethylamine-*N*-; Biosynthesis, *Baker and Chaykin*, 1309
Oxygen: Exchange; evidence, myosin hydrolysis, *Levy, Ryan, Springhorn, and Koshland*, PC1730
O^{18} studies, sulfate formation, phosphorylation, *Thiobacillus thioparus* extracts, *Peck and Stulberg*, 1648
Oxytocin: Analogue, desamino-desoxyoxytocin, synthesis, *Hope and du Vigneaud*, 3146
Desamino-; oxytocin analogue, *Hope, Murti, and du Vigneaud*, 1563
Desamino-desoxy-; synthesis, analogue, oxytocin, *Hope and du Vigneaud*, 3146

P

Pairing: Half-cystine residues, ribonuclease, side-chain interactions, *Haber and Anfinsen*, 1839
Palmityl coenzyme A: *See under* Coenzyme A
Pancreas: Esteroproteolytic enzyme, crystallization, characterization, *Gjessing and Hartnett*, 2201
Hog; enzyme, purification, study, tyrosine activation and transfer, soluble ribonucleic acid, *Clark and Eyzaguirre*, 3698
Papain: Carboxyl-terminal sequence, *Light*, 2535
Chymotryptic digest, peptides, oxidized, carboxymethylated, denatured protein, *Light and Smith*, 2537
Digestion, antigen-antibody precipitates, *Stelos and Pressman*, 3679
γ-Globulin cleavage, rabbit, *Putnam, Tan, Lynn, Easley, and Migita*, 717
Tryptic digest, isolation and sequence, peptides, oxidized protein, *Kimmel, Kato, Paiva, and Smith*, 2525
Paracentrotus lividus: Embryos, nucleoside utilization, *Nemer*, 143
Paramagnetic resonance: Spectroscopy; properties, copper, cytochrome oxidase, *Beinert, Griffiths, Wharton, and Sands*, 2337
Parameter(s): Kinetic. *See* Kinetic parameters
Particle(s): Electron transport. *See* Electron transport particle
Penicillic acid: Formation, *Penicillium cyclopium, Bentley and Keil*, 867
Penicillin: -Treated *Streptococcus faecalis*, uridine diphosphoacetylmuramyl hexapeptide, *Mandelstam, Loercher, and Strominger*, 2683
Penicillium charlesii: Carlosic and carolic acid formation, *Bentley, Bhate, and Keil*, 859
Penicillium cyclopium: Penicillic acid formation, *Bentley and Keil*, 867
Penicillium urticae: Malonate, biosynthetic intermediate, *Bu'Lock, Smalley, and Smith*, 1778
Pentose(s): Metabolism, diphosphopyridine nucleotide-specific polyol dehydrogenase, *Candida utilis, Chakravorty, Veiga, Bacila, and Horecker*, 1014
Pathway, *Escherichia coli*, quantitative significance, *Rittenberg and Ponticorvo*, PC2709
Purine and, modifications, nicotinamide adenine dinucleotide analogues, preparation, properties, *Fawcett and Kaplan*, 1709
Pepsin: Digestion, α chain, human hemoglobin, *Konigsberg and Hill*, 3157
Serum albumin, enzyme-substrate complex between, electrophoretic demonstration, *Cann*, 707
Peptidase: Activity, effects, alcohol, kinetic models, kinetics of carboxypeptidase B activity, *Folk, Wolff, Schirmer, and Cornfield*, 3105
Peptide(s): Bonds; nonenzymatic cleavage, methionine residues, bovine pancreatic ribonuclease, *Gross and Witkop*, 1856
Chymotryptic; horse heart cytochrome *c*, amino acid sequence, *Margoliash*, 2161
—; —, isolation, amino acid composition, *Margoliash and Smith*, 2151
Diheme; *Chromatium* RHP, *Dus, Bartsch, and Kamen*, 3083
Enzymatic synthesis, bacterial uridine nucleotides, enzymatic addition, D-alanyl-D-alanine, *Ito and Strominger*, 2696
—, —, addition of L-alanine, D-glutamic acid, L-lysine, *Ito and Strominger*, 2689
Inhibition, antibody, performic acid-oxidized ribonuclease, antigenic structure, studies, *Brown*, 1162
Nucleotides, other N—H-containing compounds, detection, new reagent, paper chromatograms, *Mazur, Ellis, and Cammarata*, 1619
Peptide(s)—*Continued*
Oxidized, carboxymethylated, denatured protein, chymotryptic digest of papain, *Light and Smith*, 2537
— papain, isolation and sequence, tryptic digest of papain, *Kimmel, Kato, Paiva, and Smith*, 2525
Portion; fetuin, composition, *Spiro and Spiro*, 1507
Tryptic; α chain, human hemoglobin, amino acid sequence, *Konigsberg and Hill*, 2547
—; separation, amino acid composition, α and β chains, human hemoglobin, *Guidotti, Hill, and Konigsberg*, 2184
Uridine nucleotide-; enzymatic D-alanyl-D-alanine addition, *Comb*, 1601
Performic acid: -Oxidized ribonuclease, peptide inhibition, antibody, antigenic structure, studies, *Brown* 1162
Periodate: Oxidation, α_1 acid glycoprotein, human plasma, *Eylar and Jeanloz*, 1021
Permeability: Tissue; studies, effect, anaerobiosis, glucose uptake, frog sartorius muscle, *Özand, Narahara, and Cori*, 3037
Peroxidase: Catalase and, denaturation, rotatory dispersion study, *Osbahr and Eichhorn*, 1820
Iodide. *See* Iodide peroxidase
Pyridoxal phosphate-dependent oxidative decarboxylation of methionine, characteristics and properties of reaction, *Mazelis*, 104
—, identification of 3-methylthiopropionamide as reaction product, *Mazelis and Ingraham*, 109
Peroxide: -Flavin interaction, spectral changes, reaction, dihydrolipoic acid and flavins, *Massey and Atherton*, 2965
Hydrogen. *See* Hydrogen peroxide
pH: Dependence, kinetic parameters, threonine dehydrase, *Davis and Metzler*, 1883
Measurements, blood, buffer standard, *Semple, Mattock, and Uncles*, 963
Other variables and, effect, dissociation, beef liver glutamic dehydrogenase, *Frieden*, 2396
Phaseolus radiatus: C^{14}-labeled glucose cycloacetoacetate conversion, L-ascorbic acid, *Belkhode and Nath*, 1742

Phenazine methosulfate: Catalase inhibition, *Marcus and Feeley*, 221
Phenolase(s): Common mushroom, separation, purification, *Smith and Krueger*, 1121
Phenolic amine: *See under* Amines
Phenolic compound(s): Enzyme reactions, hydroxystyrene formation, decarboxylation, 4-hydroxycinnamic acids, *Aerotobacter, Finkle, Lewis, Corse, and Lundin*, 2926
Phenolic substances: *p*-Hydroxymendelonitrile-β-glucose and, sorghum seedlings, C^{14} incorporation, *Gander*, 3229
Phenylalanine: -Activating enzyme, *Escherichia coli* 9723, purification, substrate specificity, *Conway, Lansford, and Shive*, 2850
Control, 3-deoxy-D-*arabino*-heptulosonic acid 7-phosphate synthesis, *Smith, Ravel, Lax, and Shive*, 3566
Hydroxylation cofactor, structure, *Kaufman*, PC2712
Uptake, rat brain, *Guroff and Udenfriend*, 803
Phenylalanine hydroxylase: Tryptophan hydroxylation, *Renson, Weissbach, and Udenfriend*, 2261
Phenylamine-β-hydroxylase: Substrate specificity, *Goldstein and Contrera*, 1898
Phenylcyclopropylamine(s): Iproniazid and, monoamine oxidase inhibition, amine oxidases, *Zeller and Sarkar*, 2333
Phenylethanolamine-*N*-methyl transferase: Purification, properties, *Axelrod*, 1657
Phosphatase: Alkaline, *Escherichia coli*, substrate specificity of, study, *Heppel, Harkness, and Hilmoe*, 841
Phosphate(s): Acetyl. *See* Acetyl phosphate
Acid-soluble; rat brain, electroshock effects on, *Minard and Davis*, 1283
Adenosine 3′,5′-. *See* Adenosine 3′,5′-phosphate
3-Deoxy-D-*arabino*-heptulosonic acid 7-; synthesis, control by phenylalanine and tyrosine, *Smith, Ravel, Lax, and Shive*, 3566
6-Chromanyl. *See* Chromanyl phosphate
D-Fructose 6-. *See* Fructose 6-phosphate
L-Fuculose 1-. *See* Fuculose 1-phosphate
Phosphate(s)—*Continued*
Glucose 1-. *See* Glucose 1-phosphate
N-Glycolylhexosamine 6-; preparation, and *N*-glycolylhexosamines, glycolyl coenzyme A, glycolyl glutathione, sialic acids, *Jourdian and Roseman*, 2442
Hexose. *See* Hexose phosphate
Incorporation, brain phosphoinositides, *Brockerhoff and Ballou*, 49
Inorganic; radioactive. *See under* Inorganic phosphate
Pyridoxal 5-. *See* Pyridoxal 5-phosphate
Pyridoxal 5′-, *See* Pyridoxal 5′-phosphate
Ribonucleoside 2′,3′-cyclic. *See* Ribonucleoside 2′,3′-cyclic phosphates
Ribulose. *See* Ribulose phosphate
Sedoheptulose 7-. *See* Sedoheptulose 7-phosphate
Trehalose. *See* Trehalose phosphate
D-Xylose 5-. *See* Xylose 5-phosphate
Phosphatidal choline: Isolation and characterization, *Gottfried and Rapport*, 329
Phosphatide: -Induced hypercholesterolemia, mechanism, *Byers, Friedman, and Sugiyama*, 3375
Phosphatidic acid: Biosynthesis, lysophosphatidic acid, palmityl coenzyme A, *Pieringer and Hokin*, 659
Phosphatidylserine: Synthesis, *Escherichia coli, Kanfer and Kennedy*, PC270
Phosphatidylthreonine(s): Distearoyl-L-α-glycerylphosphoryl-L-threonine synthesis, *Baer and Eckstein*, 1449
Phosphodiesterase: Cyclic 3′,5′-nucleotide. *See* Cyclic 3′,5′-nucleotide phosphodiesterase
Phosphoenolpyruvate: Source, hexose synthesis, liver and muscle, aspartate-3-C^{14}, *Bloom and Foster*, 2744
Phosphoenolpyruvic carboxytransphosphorylase: CO_2 fixation enzyme, propionic acid bacteria, *Siu and Wood*, 3044
Phosphofructokinase: Activation, serotonin and adenosine phosphate, *Mansour and Mansour*, 629
Phosphoglucomutase: Action, amino acids, identification, *Ray and Koshland*, 2493
Phosphohistidine: Identification, digests, probable intermediate, oxidative phosphorylation, *Boyer, DeLuca, Ebner, Hultquist, and Peter*, PC3306
Phosphohistidine—*Continued*
Phosphoinositide(s): Brain, complex, metabolism, *Brockerhoff and Ballou*, 1764
—, phosphate incorporation, *Brockerhoff and Ballou*, 49
Phosphoketolase: -Glycolaldehyde intermediate; formation and isolation, *Goldberg and Racker*, PC3841
Phosphokinase: Choline. *See* Choline phosphokinase
Phospholipid(s): Metabolism, effect, 2-amino-2-methyl-propanol, *Longmore and Mulford*, 694
—, intermediary, brain tissue, *McCaman*, 672
P^{32} incorporation, ouabain, effect, *Nicholls, Kanfer, and Titus*, 1043
Role in electron transfer, studies, electron transfer system, *Fleischer, Brierley, Klouwen, and Slautterback*, 3264
Phosphorus: -Containing precursors, deoxyribonucleic acid, rat liver, radiochemical equilibration, *Ives and Barnum*, 2599
Deoxyribonucleic acid; rat liver, metabolic stability, *Ives and Barnum*, 2604
Phosphorylase(s): Glycogen. *See* Glycogen phosphorylase
Hepatic; adenosine triphosphate and, levels, ethionine-treated rats, *Shull*, PC1734
Histological distribution in rat adrenal, influence of adrenocorticotropic hormone *in vivo*, studies in histochemistry, *Greenberg and Glick*, 3552
Nucleoside. *See* Nucleoside phosphorylase
Polynucleotide. *See* Polynucleotide phosphorylase
Rabbit heart; purification, properties, comparative studies, glycogen phosphorylase, *Yunis, Fischer, and Krebs*, 2809
Skeletal muscle; immunological study, *Yunis and Krebs*, 34
Phosphorylase *a*: Muscle, phosphorylated site, *Hughes, Yunis, Krebs, and Fischer*, 40
Phosphorylation: Cytidine monophosphate, *Mendicino*, 165
Enzymatic; butyrate, *Twarog and Wolfe*, 2474

Phosphorylation—*Continued*
Oxidative; biguanide and sulfonylurea compounds, action, *Falcone, Mao, and Shrago,* 904
—; mitochondria, thyroxine, influence, *Bronk and Bronk,* 897
—; probable intermediate, digests, identification, phosphohistidine, *Boyer, DeLuca, Ebner, Hultquist, and Peter,* PC3306
—; reconstitution, *Micrococcus lysodeikticus, Ishikawa and Lehninger,* 2401
—; *Rhodospirillum rubrum* extracts, *Geller,* 2947
Possible; myosin A, initial phase of myosin A-adenosine triphosphatase, *Tonomura, Kitagawa, and Yoshimura,* 3660
Respiration and, dependence of Ca^{++} uptake, rat kidney mitochondria, *Vasington and Murphy,* 2670
Phosphosulfate: Adenosine. *See* Adenosine phosphosulfate
Photolysis: Diazoacetylchymotrypsin, *Singh, Thornton, and Westheimer,* PC3006
Photophosphorylation: Cofactor, plastoquinone specificity, *Krogmann and Olivero,* 3292
Photoreduction: Disulfide; system, *Rhodospirillum rubrum* chromatophores, *Newton,* 3282
Photosynthetic processes: Studies, action spectra, quantum requirement, triphosphopyridine nucleotide reduction, adenosine triphosphate formation, spinach chloroplasts, *Black, Turner, Gibbs, Krogmann, and Gordon,* 580
—, effect of light intensity, triphosphopyridine nucleotide reduction, adenosine triphosphate formation, carbon dioxide assimilation, spinach chloroplasts, *Turner, Black, and Gibbs,* 577
Phycomyces blakesleeanus: Extracts, carotene biosynthesis, *Yokoyama, Nakayama, and Chichester,* 681
Picrate: Alkaline, reactions, creatinine, *Archibald,* 612
Pipecolic acid: Metabolic conversion to α-aminoadipic acid, *Rothstein, Cooksey, and Greenberg,* 2828
Metabolism, *Pseudomonas,* α-aminoadipic and glutamic acids, *Rao and Rodwell,* 2232
—, —, Δ^1-piperideine-6-carboxylic acid, α-aminoadipic acid-δ-semialdehyde, *Basso, Rao, and Rodwell,* 2239
Piperideine-6-carboxylic acid: Δ^1-; α-aminoadipic acid-δ-semialdehyde and, pipecolic acid metabolism, *Pseudomonas, Basso, Rao, and Rodwell,* 2239
Pituitary: Anterior; glucose oxidation, *Barondes,* 204
Placenta: Human; dehydrogenase purification, *Jarabak, Adams, Williams-Ashman, and Talalay,* 345
—; steroid specificity, 17β-hydroxysteroid dehydrogenase, *Adams, Jarabak, and Talalay,* 3069
Plant(s): Coffee, caffeine biosynthesis, *Anderson and Gibbs,* 1941
Higher; aromatic compounds metabolism, biosynthesis, dhurrin, cyanogenic glucoside, *Sorghum vulgare, Koukol, Miljanich, and Conn,* 3223
—; —, dihydrocoumarin hydrolase, *Melilotus alba,* purification, properties, *Kosuge and Conn,* 1653
Leguminous, β-cyano-L-alanine in, *Ressler,* 733
Plasma: Containing long acting thyroid stimulator; fractionation, *McKenzie,* PC3571
Diethylstilbestrol-treated men, isolation of corticosteroid-binding globulin, *Seal and Doe,* 3136
Human; α_1 acid glycoprotein, oligosaccharides from, *Eylar and Jeanloz,* 622
—; —, periodate oxidation, *Eylar and Jeanloz,* 1021
— seminal; isolation, prostaglandin E_1, prostaglandins and related factors 11, *Bergström and Samuelsson,* PC3005
Monoamine oxidase; copper, prosthetic groups, *Yamada and Yasunobu,* 3077
Plasma albumin: *See under* Albumin
Plasmalogen(s): Biochemistry, *Gottfried and Rapport,* 329
Plasmin: Trypsin, chymotrypsin and, inhibition, sheep serum inhibitor, *Martin,* 2099
Plastoquinone: Specificity, photophosphorylation cofactor, *Krogmann and Olivero,* 3292
Poisoning: Carbon tetrachloride; mitochondrial function and metal content, *Reynolds, Thiers, and Vallee,* 3546
Polyacrylamide gel: Zone electrophoresis, resolution, oligomeric and isomeric forms, plasma albumin, *Sogami and Foster,* 2514
Polyanions: Bacteriophage inactivation, *Mora, Young, and Rizvi,* 157
Kinetics, inhibition, lipoprotein, lipase, *Korn,* 3423
Polycarboxylic acid: Activation, rat liver deoxyribose phosphate aldolase, *Jiang and Groth,* 3339
Polycations: Kinetics, inhibition, lipoprotein lipase, *Korn,* 3423
Polyelectrolyte(s): Blocking, bacteriophage T2 antiserum, *Mora and Young* 1870
Polymer(s): Deoxyguanylate and deoxycytidylate, enzymatic synthesis, deoxyribonucleic acid, *Radding Josse, and Kornberg,* 2869
Deoxynucleotide; primed, kinetics of, synthesis *de novo,* enzymatic synthesis, deoxyribonucleic acid, *Radding and Kornberg,* 2877
Interconversion with monomer, horse heart cytochrome *c, Margoliash and Lustgarten,* 3397
Polymerase(s): Calf thymus, oligodeoxyribonucleotide-primed reactions, *Bollum,* 1945
Formation after T2 bacteriophage infection of *Escherichia coli, Aposhian and Kornberg,* 519
Ribonucleic acid. *See* Ribonucleic acid polymerase
Polynucleotide(s): Nature, polyribonucleotide formation, adenosine triphosphate, thymus nuclei enzyme, *Edmonds and Abrams,* 2636
Polyriboguanylic acid synthesis, polyribonucleotide phosphorylase, *Fresco and Su,* PC3305
Polynucleotide phosphorylase: Bacterial cell membranes, *Abrams and McNamara,* 170
Catalysis, oligonucleotide-dependent reactions, *Singer and Guss,* 182
Clostridium perfringens, polypeptides, effect, polyribonucleotide synthesis, *Dolin,* 1626
Polyriboguanylic acid synthesis, polynucleotides, *Fresco and Su,* PC3305
Polyol dehydrogenase: Diphosphopyridine nucleotide-specific, pentose metabolism, *Candida utilis, Chakravorty, Veiga, Bacila, and Horecker,* 1014
Polypeptide(s): Basic; effect, polyribonucleotide synthesis, polynucleotide phosphorylase, *Clostridium perfringens, Dolin,* 1626
Chains, subunit, myosin, dissociation, reassociation, *Young, Harrington, and Kielley,* 3116

Polypeptide(s)—*Continued*
Ultraviolet spectra, solvent and conformational effects, *Glazer and Rosenheck*, 3674
Polyporus circinatus: D-Galactose oxidase, *Avigad, Amaral, Asensio, and Horecker*, 2736
Polyriboguanylic acid: Synthesis, polynucleotide phosphorylase, polynucleotides, *Fresco and Su*, PC3305
Polyribonucleotide(s): Formation, adenosine triphosphate, thymus nuclei enzyme, polynucleotide nature, *Edmonds and Abrams*, 2636
Synthesis, effect, basic polypeptides, polynucleotide phosphorylase, *Clostridium perfringens, Dolin*, 1626
Polysaccharide(s): Capsular, synthesis by Streptococcus, *Markovitz and Dorfman*, 273
Protein-; synthesis, bovine costal cartilage, *Campo and Dziewiatkowski*, 2729
D-Talomethylose and D-rhamnose isolation, gram-negative bacterium, *Markovitz*, 1767
Polysaccharide depolymerase: Inducible, *Bacillus palustris, Torriani and Pappenheimer*, 3
Precipitates: Antigen-antibody; papain digestion, *Stelos and Pressman*, 3679
Precursor(s): Fatty acid synthesis, supply, *Spencer and Lowenstein*, 3640
Phosphorus-containing, deoxyribonucleic acid, rat liver, radiochemical equilibration, *Ives and Barnum*, 2599
Ribonucleic acid; thymidine and, radiocarbon utilization, *Neurospora crassa, Fink and Fink*, 2289
Prefolic A: -Methyltetrahydrofolate; enzymatic conversion, from methylenetetrahydrofolic acid, *Donaldson and Keresztesy*, 1298
Pregnene(s): Δ^5-; C_{17}-hydroxylated, C_{21}-hydroxylated, adrenal 3β-hydroxysteroid dehydrogenase activity, *Berliner, Cazes, and Nabors*, 2478
Pregnenolone: Biosynthesis, dihydroxycholesterol, intermediate in, *Shimizu, Gut, and Dorfman*, 699
—, 22-hydroxycholesterol, *Chaudhuri, Harada, Shimizu, Gut, and Dorfman*, 703
Prolactin: Growth hormone and, enzymatic transformations, *Lewis*, 3141
Prolinase: (Iminodipeptidase); comparison, proline iminopeptidase, purification, *Sarid, Berger, and Katchalski*, 2207
Proline: Glutamic acid and, interconversion, proline oxidation, rat liver mitochondria, *Johnson and Strecker*, 1876
—, —, reduction, Δ^1-pyrroline-5-carboxylic acid, *Peisach and Strecker*, 2255
Oxidation, rat liver mitochondria, interconversion, glutamic acid and proline, *Johnson and Strecker*, 1876
Reduction of Δ^1-pyrroline-5-carboxylic acid, interconversion, glutamic acid, proline, *Peisach and Strecker*, 2255
Proline iminopeptidase: Purification, comparison, iminodipeptidase (prolinase), *Sarid, Berger, and Katchalski*, 2207
Propionibacterium pentosaceum: D-Arabinokinase, purification and properties, *Volk*, 19
Propionate: Metabolism, mammary gland, liver, lactating rat, *Katz and Kornblatt*, 2466
Propionic acid: Bacteria; CO_2 fixation enzyme, phosphoenolpyruvic carboxytransphosphorylase, *Siu and Wood*, 3044
Formation, mitochondria, rat liver, *Suld, Staple, and Gurin*, 338
Metabolism, animal tissues, methylmalonyl coenzyme A racemase, *Mazumder, Sasakawa, Kaziro, and Ochoa*, 3065
Propionyl carboxylase: Mitochondrial, enzymic properties, *Halenz, Feng, Hegre, and Lane*, 2140
Reaction mechanism, isotopic exchange, tracer experiments, *Kaziro, Hass, Boyer, and Ochoa*, 1460
Propionyl holocarboxylase: Synthesis, preparation, properties, enzyme system, *Kosow, Huang, and Lane*, 3633
Propiothetin: Dimethyl-β-; biosynthesis, *Greene*, 2251
Prostaglandin(s): And related factors 11, isolation, prostaglandin E_1, human seminal plasma, *Bergström and Samuelsson*, PC3005
E_1; isolation, human seminal plasma, prostaglandins and related factors 11, *Bergström and Samuelsson*, PC3005
Protein(s): A; amino-terminal sequence, tryptophan synthetase, *Escherichia coli, Carlton and Yanofsky*, 1531
—; tryptophan synthetase, *Escherichia coli, Henning, Helinski, Chao, and Yanofsky*, 1523
-Bound, glutamine and asparagine, determination, *Tower, Peters, and Wherrett*, 1861
Conformations, thermal stability, hydrophobic bond contribution, *Scheraga, Némethy, and Steinberg*, 2506
Denaturation, urea, amino acid solubility, urea solutions, *Whitney and Tanford*, PC1735
Egg white; formation site, *Mandeles and Ducay*, 3196
-Free diets, fasting and, effects, urea cycle enzymes, rat liver, *Schimke*, 1921
Hydrolysis, enzymic, *Hill and Schmidt*, 389
Inert, activation, flavin-induced photodependent deiodination, thyroxine, *Morreale de Escobar, Escobar del Rey, and Llorente Rodriguez*, PC2041
Location, chromophoric residues, solvent perturbation, tyrosyls, ovomucoid, *Herskovits and Laskowski*, 3418
—, —, —, —, serum albumins, *Herskovits and Laskowski*, 2481
Mouse submaxillary gland; isolation, incisor eruption, eyelid opening, *Cohen*, 1555
Nuclear magnetic resonance studies, *Kowalsky*, 1807
Oxidized, carboxymethylated, denatured papain, peptides, chymotryptic digest, *Light and Smith*, 2537
—papain, peptides, isolation, sequence, tryptic digest of papain, *Kimmel, Kato, Paiva, and Smith*, 2525
Reactions with carbohydrates, aqueous solutions, studies, hydrogen-bond formation, *Giles and McKay*, 3388
Soluble leaf; correlation with chlorophyll accumulation, *Kupke*, 3287
-Steroid interactions, Δ^4-3-ketosteroid structure, spectrophotometric interaction, human serum albumin, *Westphal and Ashley*, 2763

Protein(s)—*Continued*
Synthesis, cell-free *Escherichia coli* preparations, chloramphenicol effect, *Rendi and Ochoa*, 3711
— pathway, puromycin, dissociative effect, *Rabinovitz and Fisher*, 477
Protein-polysaccharides: Synthesis, bovine costal cartilage, *Campo and Dziewiatkowski*, 2729
Pseudomonas: Pipecolic acid metabolism, α-aminoadipic and glutamic acids, *Rao and Rodwell*, 2232
—, Δ^1-piperideine-6-carboxylic acid, α-aminoadipic acid-δ-semialdehyde, *Basso, Rao, and Rodwell*, 2239
Pseudouridine: Formation, uridine derivative rearrangement, *Robbins and Hammond*, PC1379
Pteridine: Moiety, folic acid, guanine compounds, enzymatic formation, *Reynolds and Brown* PC2713
Purine(s): Analogues, incorporation into ribonucleic acid, role of deoxyribonucleic acid, *Kahan and Hurwitz*, 3778
Biosynthesis, action mechanism, adenylsuccinase, *Miller and Buchanan*, 491
—, *N*-(5-amino-1-ribosyl-4-imidazolylcarbonyl)-L-aspartic acid 5′-phosphate kinosynthetase, *Miller and Buchanan*, 485
—, ascites tumor cells, feedback inhibition, *Henderson*, 2631
—, hadacidin, inhibitor, *Shigeura and Gordon*, 1932
Metabolism, chromatographic study, *Tomisek and Reid*, 807
Pentose and, modifications, nicotinamide adenine dinucleotide analogues, preparation, properties, *Fawcett and Kaplan*, 1709
Purine nucleotide(s): Synthesis, human erythrocyte, enzymatic deficiencies, *Lowy, Williams, and London*, 1622
Purine ribonucleotide(s): Intestinal digestion, absorption, studies *in vitro*, *Wilson and Wilson*, 1643
Puromycin: Dissociative effect, pathway of protein synthesis, Ehrlich ascites cells, *Rabinovitz and Fisher*, 477
Tryptophan pyrrolase formation, effect, *Nemeth and de la Haba*, 1190
Pyridine nucleosidase: Purification and properties, bull semen, *Abdel-Latif and Alivisatos*, 500
Pyridine nucleotide(s): Biosynthesis, *Escherichia coli*, *Imsande and Pardee*, 1305
Pyridine nucleotide(s)—*Continued*
Coenzyme. *See under* Coenzyme(s)
Fluorescence, mitochondria, *Avi-Dor, Olson, Doherty, and Kaplan*, 2377
Reduced; hydrogen transfer from, to microsomal cytochrome b_5 reductase, *Strittmatter*, 3250
Pyridoxal 5-phosphate: Enzyme-bound, spectral properties, serine transhydroxy methylase, *Schirch and Mason*, 2578
Pyridoxal 5′-phosphate: Specific binding, bovine plasma albumin, *Dempsey and Christensen*, 1113
Pyridoxamine: Transamination, enzymatic, oxaloacetate, ketoglutarate, *Wada and Snell*, 127
—, —, pyridoxamine-pyruvate transaminase, *Wada and Snell*, 133
Pyridoxamine-pyruvate transaminase: Crystalline, *Wada and Snell*, 133
Pyrimidine: Analogues, incorporation into ribonucleic acid, role of deoxyribonucleic acid, *Kahan and Hurwitz*, 3778
Feedback, enzymology, *Gerhart and Pardee*, 891
Pyrophosphate: Biosynthesis, 5′-inosinic acid, 5′-adenylic acid, imidazolytic processes, *Alivisatos, LaMantia, Ungar, and Matijevitch*, 1212
Farnesyl. *See* Farnesyl pyrophosphate
Inorganic. *See* Inorganic pyrophosphate
Pyrrolase: Tryptophan. *See* Tryptophan pyrrolase
Pyrrolidine ring: Nicotine; synthesis, C^{14}-labeled metabolites, *Nicotiana rustica*, *Wu, Griffith, and Byerrum*, 887
Pyrroline-5-carboxylic acid: Δ^1-; reduction to proline, interconversion, glutamic acid, proline, *Peisach and Strecker*, 2255
Pyruvate: C^{14}-; studies, γ-methyl-γ-hydroxy-α-ketoglutaric aldolase, *Marcus and Shannon*, 3348
-Carbon dioxide exchange reaction, *Peel*, PC263
Ethanol, acetate, butyrate and, metabolism, "drinker" and "nondrinker" rats, *Segovia-Riquelme, Campos, Solodkowska, González, Alvarado, and Mardones*, 2038
Metabolism, citrate formation, ascitic nodules, mammary carcinoma, Walker rat, *Reiss, Hellerman, Ambrose, Smith, Gey, and Iber*, 992
Metabolism, rat brain, *Koeppe and Hahn*, 1026
Pyruvate—*Continued*
—, utilization, isolated mitochondria, ascitic mammary carcinoma, Walker rat, *Hellerman, Reiss, and Gey*, 997
Pyruvate carboxylase: *Aspergillus niger*, *Bloom and Johnson*, 2718
Pyruvate kinase: Structural and functional changes, diethylstilbestrol, steroid hormones, *Kimberg and Yielding*, 3233

Q

Quinaldic acid: Kynurenic and xanthurenic acids and, metabolism, rabbit, *Kaihara and Price*, 1727
Quinone(s): Reactivation ability, *p*-hydroxyphenylpyruvic acid oxidase, tyrosine oxidation system, liver, *Zannoni*, 1172

R

Racemase: Coenzyme A. *See* Coenzyme A racemase
Radioactivity: Carbon; determination, CO_2 transfer to counting tubes without liquid nitrogen, *Van Slyke and Plazin*, 3296
Radiocarbon: Thymidine, other ribonucleic acid precursors, utilization, *Neurospora crassa*, *Fink and Fink*, 2289
Reaction mechanism: Formate-activating enzyme, *Micrococcus aerogenes*, *Whiteley and Huennekens*, 1290
Formyltetrahydrofolate synthetase, studies, *Himes and Rabinowitz*, 2915
Propionyl carboxylase, isotopic exchange, tracer experiments, *Kaziro, Hass, Boyer, and Ochoa*, 1460
Reagent(s): Peptides, nucleotides, other N—H-containing compounds, detection, paper chromatograms, *Mazur, Ellis, and Cammarata*, 1619
Reductase(s): Coenzyme A. *See* Coenzyme A reductase
Cytochrome b_5. *See* Cytochrome b_5 reductase
Cytochrome *c*. *See* Cytochrome *c* reductase
DPNH-coenzyme Q. *See* Diphosphopyridine nucleotide: Reduced; -coenzyme Q reductase
Glutathione. *See* Glutathione reductase
4-Ketoproline. *See* Ketoproline reductase
Reduced coenzyme Q (QH_2)-cytochrome *c*. *See* Coenzyme Q: Re-

Reductase(s)—*Continued*
duced (QH_2); -cytochrome *c* reductase
Reduced nicotinamide adenine dinucleotide-cytochrome *c*. *See* Nicotinamide adenine dinucleotide-cytochrome *c* reductases
Triphosphopyridine nucleotide-cytochrome *c*. *See* Triphosphopyridine nucleotide-cytochrome *c* reductase
Reduction: Reversible; and reoxidation, poly-DL-alanyl trypsin, *Epstein and Anfinsen*, 3464
—; disulfide bonds, polyalanyl ribonuclease, *Anfinsen, Sela, and Cooke*, 1825
—; —, trypsin and ribonuclease, carboxymethyl cellulose, *Epstein and Anfinsen*, 2175
Rehydrovitamin A_2: Anhydrovitamin A_2 and, *Bamji, Cama, and Sundaresan*, 2747
Renal cortex: Hog, L-α-hydroxy acid oxidases, *Robinson, Keay, Molinari, and Sizer*, 2001
Renilla reniformis: Bioluminescence studies, 3′,5′-diphosphoadenosine requirement, luminescent reaction, *Cormier*, 2032
Reoxidation: Poly-DL-alanyl trypsin, and reversible reduction, *Epstein and Anfinsen*, 3464
Residue(s): Chromophoric; location, proteins, solvent perturbation, tyrosyls, ovomucoid, *Herskovits and Laskowski*, 3418
—; —, —, —, —, serum albumins, *Herskovits and Laskowski*, 2481
Eleven to 18; sequence, bovine pancreatic ribonuclease, *Smyth, Stein, and Moore*, 1845
—; —, —, reinvestigation, *Potts, Berger, Cooke, and Anfinsen*, 1851
Half-cystine, ribonuclease, pairing, side-chain interactions, *Haber and Anfinsen*, 1839
Methionine; bovine pancreatic ribonuclease, peptide bonds, nonenzymatic cleavage, *Gross and Witkop*, 1856
Resonance: Electron spin. *See* Electron spin resonance
Nuclear magnetic. *See* Nuclear magnetic resonance
Paramagnetic. *See* Paramagnetic resonance
Resorption: Renal; resistance, metabolic attack, amino acid transport
Resorption—*Continued*
models, *Christensen and Jones*, 1203
Respiration: Phosphorylation and, dependence of Ca^{++} uptake, rat kidney mitochondria, *Vasington and Murphy*, 2670
Respiratory chain: -Linked dehydrogenase, reduced nicotinamide adenine dinucleotide-cytochrome *c* reductases, formation, comparison, heart mitochondria, *Watari, Kearney, Singer, Basinski, Hauber, and Lusty*, PC1731
— dihydrodiphosphopyridine nucleotide dehydrogenase, *Minakami, Ringler, and Singer*, 569
Relationship, mitochondrial D-β-hydroxybutyric dehydrogenase, *Wise and Lehninger*, 1363
Respiratory chain system: Structure, *Hemophilus parainfluenzae* studies, *Smith and White*, 1337
Reticulocyte(s): Maturation, biochemical aspects, fate of ribonucleic acid, *Bertles and Beck*, 3770
Retinene$_2$: Conversion of vitamin A_1, fresh-water fish, *Naito and Wilt*, 3060
Rhamnose: D-; D-talomethylose and, isolation, polysaccharide, gram-negative bacterium, *Markovitz*, 1767
Thymidine diphosphate L-; synthesis, *Escherichia coli* strains, thymidine diphosphate 4-keto-6-deoxy-D-glucose intermediate, *Okazaki, Okazaki, Strominger, and Michelson*, 3014
Rhodanese: Action, isotopic tracer studies, *Westley and Nakamoto*, 547
Rhodospirillum rubrum: Chomatophores, disulfide photoreduction system, *Newton*, 3282
Extracts, oxidative phosphorylation, *Geller*, 2947
Hydroxybutyric acid dehydrogenase from, *Shuster and Doudoroff*, 603
RHP: *Chromatium;* diheme peptide, *Dus, Bartsch, and Kamen*, 3083
Ribitol dehydrogenase: Product inhibition, kinetic study, *Fromm and Nelson*, 215
Riboflavin: Biosynthesis, *Eremothecium ashbyii*, utilization, ureide carbon of adenine, *Smith, Connelly, and Smead*, 3207
-Deficient rats; fetus and liver, flavin
Riboflavin—*Continued*
nucleotides and folic acid in, *Miller, Poncet, and Takacs*, 968
Ribofuranoside: β-D-Ribofuranosyl, *Rosenberg and Zamenhof*, 1040
Ribonuclease(s): Acid; separation, characterization, chromatographic, bovine spleen and liver, *Maver and Greco*, 736
Alkaline; separation, characterization, chromatographic, bovine spleen and liver, *Maver and Greco*, 736
Binding, sulfate and chloride ions, *Saroff and Carroll*, 3384
Bovine pancreatic; methionine residues, peptide bonds, nonenzymatic cleavage, *Gross and Witkop*, 1856
—; sequence, residues 11 to 18, *Smyth, Stein, and Moore*, 1845
—; —, —, reinvestigation, *Potts, Berger, Cooke, and Anfinsen*, 1851
Half-cystine residues, pairing, side-chain interactions, *Haber and Anfinsen*, 1839
Inhibiton, copolymers, glutamic acid, aromatic amino acid, *Sela*, 418
Interaction with ribonucleic acid, relative importance, of electrostatic forces, *Mora*, 3210
Pancreatic; denaturation, urea, *Nelson and Hummel*, 1567
—; stabilization, urea denaturation, anion binding, *Nelson, Hummel, Swenson, and Friedman*, 1575
Performic acid-oxidized; peptide inhibition, antibody, antigenic structure, studies, *Brown*, 1162
Polyalanyl, disulfide bonds, reduction, *Anfinsen, Sela, and Cooke*, 1825
Trypsin and, carboxymethyl cellulose, reversible reduction, disulfide bonds, *Epstein and Anfinsen*, 2175
Ribonuclease-S: System, changes, absorption spectra, *Richards and Logue*, 3693
Ribonuclease T_1: Digests of ribonucleic acid, characterization, major compounds, tetranucleotides, *Rushizky and Sober*, 2883
—, major compounds in, characterization, *Rushizky and Sober*, 834
Ribonucleic acid(s): Alanine-acceptor; purification, yeast, *Apgar, Holley, and Merrill*, 796
Carrier; activation and transfer of leucine, ribosomes, species specificity, *Rendi and Ochoa*, 3707
Characterization, major compounds, ribonuclease T_1 digests, tetranu-

Ribonucleic acid(s)—*Continued*
cleotides, *Rushizky and Sober*, 2883
-Dependent ribonucleotide incorporation, purification, properties, enzyme, *August, Ortiz, and Hurwitz*, 3786
Endonuclease inhibition, study, *Lehman, Roussos, and Pratt*, 829
Fate, reticulocyte maturation, biochemical aspects, *Bertles and Beck*, 3770
Histidine-acceptor; purification, yeast, *Apgar, Holley, and Merrill*, 796
-Inhibitable endonuclease; purification and properties, *Lehman, Roussos, and Pratt*, 819
Insulin-like actions, and adenylic acid and adenosine, *Dole*, 2758
Interaction with ribonuclease, relative importance of electrostatic forces, *Mora*, 3210
Precursors; thymidine and, radiocarbon utilization, *Neurospora crassa, Fink and Fink*, 2289
Ribonuclease T_1 digests, major compounds in, characterization, *Rushizky and Sober*, 834
Soluble; rabbit liver, studies, frequencies, base sequences, specific enzymatic hydrolysis, *McCully and Cantoni*, 3760
—; tyrosine activation and transfer, purification, study, hog pancreas enzyme, *Clark and Eyzaguirre*, 3698
Synthesis, deoxyribonucleic acid role, and influence on reaction, *Hurwitz, Furth, Anders. and Evans*, 3752
—, —, incorporation, pyrimidine and purine analogues, ribonucleic acid, *Kahan and Hurwitz*, 3778
—, —, purification, properties, ribonucleic acid polymerase, *Furth, Hurwitz, and Anders*, 2611
Tobacco mosaic virus; identification, end groups, enzymatic hydrolysis, *Whitfield*, 2865
Tyrosine-acceptor; purification, yeast, *Apgar, Holley, and Merrill*, 796
Valine-acceptor; purification, yeast, *Apgar, Holley, and Merrill*, 796
Ribonucleic acid polymerase: Purification, properties, deoxyribonucleic acid role, ribonucleic acid synthesis, *Furth, Hurwitz, and Anders*, 2611
Ribonucleoprotein: Rat liver microsomes, physicochemical properties, *Hamilton, Cavalieri, and Petermann*, 1155
Ribonucleoside 2′,3′-cyclic phosphates: Hydrolysis, diesterase, brain, *Drummond, Iyer, and Keith*, 3535
Ribonucleotide(s): Purine. *See* Purine ribonucleotide(s)
Ribonucleic acid-dependent incorporation, purification, properties, enzyme, *August, Ortiz, and Hurwitz*, 3786
Ribosomes: Activation and transfer of leucine, carrier ribonucleic acid, species specificity, *Rendi and Ochoa*, 3707
Ribosyl nicotinamide: Reduced; oxidation, flavoprotein, purification, properties, *Liao, Dulaney, and Williams-Ashman*, 2981
Ribulose 5-phosphate: D-; preparation, simple method, *Pontremoli and Mangiarotti*, 643
Rodent(s): Wild Peruvian, high altitude, tissues, myoglobin levels, *Reynafarje and Morrison*, 2861
Rotatory dispersion: Study, denaturation, catalase and peroxidase, *Osbahr and Eichhorn*, 1820

S

Saccharide(s): D-Glucose, cellobiose and, formation, cellulose synthesis, *Acetobacter acetigenum*, lactate-buffered glycerol medium, *Ramamurti and Jackson*, 2434
Saccharomyces fragilis: Inulinase action pattern, inulin, *Snyder and Phaff*, 2438
Salicylic acid: Enzymic hydroxylation and decarboxylation, flavin adenine dinucleotide requirement, *Katagiri, Yamamoto, and Hayaishi*, PC2413
Salt(s): Influence, Bohr effect, human hemoglobin, studies, relations, molecular and functional properties, hemoglobin, *Antonini, Wyman, Rossi-Fanelli, and Caputo*, 2773
Inorganic; effect, optical rotatory dispersion, myosin A, *Tonomura, Sekiya, and Imamura*, 3110
Salvia officinalis: Pentacyclic triterpenes, β-sitosterol and, biosynthesis, *Nicholas*, 1476
Sarcosine dehydrogenase: And fatty acyl coenzyme A systems, functional identity, electron-transferring flavoproteins, *Beinert and Frisell*, 2988
Separation and purification, *Frisell and Mackenzie*, 94
Sartorius muscle: Frog; glucose uptake, effect, anaerobiosis, tissue permeability studies, *Özand, Narahara, and Cori*, 3037
Sclareol: β-Sitosterol, oleanolic acid and, biosynthesis, mevalonic acid-2-C^{14}, *Nicholas*, 1481
Scurvy: Metabolic study, guinea pigs, *Banerjee and Ganguli*, 14
Secretion: Mechanism, γ-globulins, isolated lymph node cells, observations, *Helmreich, Kern, and Eisen*, 1925
Sedoheptulose 7-phosphate: D-Xylose 5-phosphate and, interconversion with D-fructose 6-phosphate, transketolase and transaldolase, *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti*, 3597
Seedling(s): Mung bean. *See under* Mung bean
Sorghum. *See under* Sorghum
Semen: Bull; glycosidase, purification and properties, *Abdel-Latif and Alivisatos*, 500
Semialdehyde(s): Aminoadipic acid-δ-. *See* Aminoadipic acid-δ-semialdehyde
Sequence(s): Amino acid; chymotryptic peptides, horse heart cytochrome *c*, *Margoliash*, 2161
—; human heart cytochrome *c*, *Matsubara and Smith*, PC3575
—; tryptic peptides, α chain, human hemoglobin, structure, *Kongisberg and Hill*, 2547
Amino-terminal; A protein, tryptophan synthetase, *Escherichia coli, Carlton and Yanofsky*, 1531
Base; rabbit liver soluble ribonucleic acid, frequencies, specific enzymatic hydrolysis, *McCully and Cantoni*, 3760
Carboxyl-terminal, papain, *Light*, 2535
Nearest neighbor base, deoxyribonucleic acid, studies, enzymatic synthesis, *Swartz, Trautner, and Kornberg*, 1961
Residues 11 to 18, bovine pancreatic ribonuclease, *Smyth, Stein, and Moore*, 1845
—, —, reinvestigation, *Potts, Berger, Cooke, and Anfinsen*, 1851

Sera: Macroglobulinemic; anomalous and normal globulins in, chromatographic study, *Fahey,* 440
Myeloma; anomalous and normal globulins in, chromotographic study, *Fahey,* 440
Serine: D-; blood, silkworm *Bombyx mori,* other Lepidoptera, *Srinivasan, Corrigan, and Meister,* PC3844
-Glycine *Escherichia coli* auxotrophs, metabolite uptake, studies, *Levine and Simmonds,* 3718
Metabolism, actions, isoserine, other inhibitors, *Leibman and Fellner,* 2213
Serine dehydrase: Activities, rat liver, studies, nature, inducibility, and assay, *Goldstein, Knox, and Behrman,* 2855
Serine transhydroxymethylase: Spectral properties, enzyme-bound pyridoxal 5-phosphate, *Schirch and Mason,* 2578
Serotonin: Effects, phosphofructokinase, *Fasciola hepatica, Mansour and Mansour,* 629
Serratia marcescens: Spermidine oxidase, *Bachrach,* 3443
Serum: Sheep; inhibitor, trypsin, chymotrypsin, plasmin inhibition, *Martin,* 2099
Serum albumin: *See under* Albumin
—**SH group(s):** Rabbit muscle D-glyceraldehyde 3-phosphate dehydrogenase, interaction, oxidized glutathione, cystamine monosulfoxide, tetrathione and, *Pihl and Lange,* 1356
Sialic acid(s): Biosynthesis, *Warren and Felsenfeld,* 1421
—, *Neisseria meningitidis, Blacklow and Warren,* 3520
Contribution, surface charge, erythrocyte, *Eylar, Madoff, Brody, and Oncley,* 1992
Distribution, properties, animal *N*-acetylneuraminic aldolase, *Brunetti, Jourdian, and Roseman,* 2447
Preparation, *N*-glycolylhexosamines, *N*-glycolylhexosamine 6-phosphates, glycolyl coenzyme A, glycolyl glutathione, *Jourdian and Roseman,* 2442
Side chain: Isooctyl, cholestanetriol oxidation, propionic acid formation, *Suld, Staple, and Gurin,* 338
Sigma-rho function: Diphosphopyridine nucleotide-linked aldehyde dehydrogenase, *Deitrich, Hellerman, and Wein,* 560
Silkworm: *Bombyx mori;* other Lepidoptera, D-serine in blood, *Srinivasan, Corrigan, and Meister,* PC3844
Sitosterol: Pentacyclic triterpenes and, biosynthesis, *Salvia officinalis, Nicholas,* 1476
Sclareol, oleanolic acid and, biosynthesis, mevalonic acid-2-C^{14}, *Nicholas,* 1481
Terpenoid substances and, biosynthesis, *Ocimum basilicum,* mevalonic acid-2-C^{14}, *Nicholas,* 1485
Solvent(s): Effects, and conformational effects, ultraviolet spectra of polypeptides and substituted amides, *Glazer and Rosenheck,* 3674
-Induced changes, role on enzymatic adenosine triphosphatase activity, cardiac myosin A, *Brahms and Kay,* 3449
Solvent perturbation: Location, chromophoric residues, proteins, tyrosyls, ovomucoid *Herskovits and Laskowski,* 3418
—, —, —, —, serum albumins, *Herskovits and Laskowski,* 2481
D-Sorbitol 6-phosphate dehydrogenase: D-Mannitol 1-phosphate dehydrogenase and, in *Aerobacter aerogenes, Liss, Horwitz, and Kaplan,* 1342
Sorghum: Seedlings; C^{14} incorporation into *p*-hydroxymandelonitrile-β-glucose and other phenolic substances, *Gander,* 3229
Sorghum vulgare: Cyanogenic glucoside, dhurrin, biosynthesis, metabolism of aromatic compounds in higher plants, *Koukol, Miljanich, and Conn,* 3223
Species: Differences, interaction, thrombin and fibrinogen, *Doolittle, Oncley, and Surgenor,* 3123
Specificity, activation, transfer, leucine, carrier ribonucleic acid, ribosomes, *Rendi and Ochoa* 3707
Spectra: Nuclear magnetic resonance; adenosine di- and triphosphate, *Cohn and Hughes,* 176
Spectral changes: Requirements, B_{12} coenzyme biosynthesis, *Weissbach, Redfield, and Peterkofsky,* 3217
Spectroscopy: Paramagentic resonance; properties, copper, cytochrome oxidase, *Beinert, Griffiths, Wharton, and Sands,* 2337
Spermidine: Deoxyribosyl-synthesizing system extraction, T6r$^+$-infected *Escherichia coli, Cohen and Barner,* PC1376
Spermidine oxidase: *Serratia marcescens, Bachrach,* 3443
Sphingosine: Configuration, rat brain homogenates, *Fujino and Zabin,* 2069
Spinach: Leaves, cell-free preparations, acetate metabolism, *Mudd and McManus,* 2057
Squalene: Biosynthesis, *Childs and Bloch,* 62
—, utilization of 1-H_2^3-2-C^{14}- and 1-D_2-2-C^{14}-*trans*-*trans*-farnesyl pyrophosphate, studies on cholesterol biosynthesis, *Popják, Cornforth, Cornforth, Ryhage, and Goodman,* 56
Stability: Metabolic; deoxyribonucleic acid phosphorus, rat liver, *Ives and Barnum,* 2604
Thermal; protein conformations, hydrophobic bond contribution, *Scheraga, Némethy, and Steinberg,* 2506
Stabilization: Anion binding, urea denaturation, pancreatic ribonuclease, *Nelson, Hummel, Swenson, and Friedman,* 1575
Staphylococcus aureus: Strain Copenhagen; chemical structure, teichoic acid, *Sanderson, Strominger, and Nathenson,* 3603
Strains, teichoic acids, enzymatic synthesis and immunochemistry of *N*-acetylglucosaminylribitol linkages, *Nathenson and Strominger,* PC3839
Starch: Dextrins and, glucosyl transfer, *Candida* transglucosyl-amylase, *Sawai and Hehre,* 2047
State(s): Subactive; glucose 6-phosphate dehydrogenase, human erythrocytes, normal persons, *Kirkman and Hendrickson,* 2371
Stereospecificity: α-Methylserine hydroxymethyltransferase, metabolism, α-methylserine, *Wilson and Snell,* 3180
Steroid(s): Bile acids and, synthesis, 3β-hydroxylated bile acids, isolation, 3β,12α-dihydroxy-5β-cholanic acid from feces, *Danielsson, Eneroth, Hellström, and Sjövall,* 3657
Hormones; and diethylstilbestrol, structural and functional changes, pyruvate kinase, *Kimberg and Yielding,* 3233

Steroid(s)—*Continued*
—; carbon atoms, origin, bovine adrenal, acetate-1-C^{14}, corticosteroid degradation, *Caspi, Dorfman, Khan, Rosenfeld, and Schmid,* 2085
— formation, corpus luteum, ovarian tissue, studies *in vitro*, *Huang and Pearlman,* 1060
—; rabbit liver aldehyde dehydrogenase, *Maxwell,* 1699
-Protein interactions, Δ^4-3-ketosteroid structure, spectrophotometric interaction, human serum albumin, *Westphal and Ashley,* 2763
Reduction, enzymatic, *Ringold, Ramachandran, and Forchielli,* PC260
Specificity, 17β-hydroxysteroid dedrogenase, human placenta, *Adams, Jarabak, and Talalay,* 3069
Steroid hydroxylase: bovine adrenal cortex, preparation, properties, *Sharma, Forchielli, and Dorfman,* 1495
Sterol: Detection, probable structure of $\Delta^{5,7,24}$-cholestatrien-3β-ol, intestinal wall, triparanol-treated guinea pigs, *Frantz, Sanghvi, and Clayton,* 3381
Strength: Ionic. *See* Ionic strength
Streptococcus: Group A, hyaluronic acid synthesis, *Markovitz and Dorfman,* 273
Streptococcus faecalis: Hydroxylysine metabolism, *Tsung, Smith, Leach, and Henderson,* 1194
Penicillin-treated, uridine diphosphoacetylmuramyl hexapeptide, *Mandelstam, Loercher, and Strominger,* 2683
Reduced diphosphopyridine nucleotide oxidase, purification, properties, *Hoskins, Whiteley, and Mackler,* 2647
Streptodornase (streptococcal deoxyribonuclease): Digestion products, deoxyribonucleic acid, characterization, *Georgatsos, Unterholzner, and Laskowski,* 2626
Studies: Equilibration. *See* Equilibration studies
Flow. *See* Flow studies
Kinetic. *See* Kinetic studies
Submaxillary gland: Mouse; protein isolation, incisor eruption, eyelid opening, *Cohen,* 1555
Substrate(s): -Apocarboxypeptidase complexes, *Coleman and Vallee,* 3430
Induction, increased titers, liver tryptophan pyrrolase, immunochemical evidence, *Feigelson and Greengard,* 3714
Inhibition, reversible inhibitors, acetylcholinesterase, *Wilson and Alexander,* 1323
Specificities, anthranilate and benzoate oxidases, hydroxylation, aromatic carboxylic acids, *Ichihara, Adachi, Hosokawa, and Takeda,* 2296
Specificity, phenylalanine-activating enzyme, *Escherichia coli* 9723, and purification, *Conway, Lansford, and Shive,* 2850
—, phenylanine-β-hydroxylase, *Goldstein and Contrera,* 1898
Succinate: Oxidation; activation and inhibition, adenosine diphosphate supplements to pigeon heart mitochondria, *Chance and Hagihara,* 3540
Sugar(s): Amino; thymidine diphosphate-, synthesis of thymidine-linked sugars, *Kornfeld and Glaser,* 3052
Thymidine-linked; synthesis, thymidine diphosphate-amino sugars, *Kornfeld and Glaser,* 3052
Sulfate: Formation, phosphorylation, O^{18} studies, *Thiobacillus thioparus* extracts, *Peck and Stulberg,* 1648
Reduction, *Desulfovibrio desulfuricans,* adenosine-5′-phosphosulfate in, *Peck,* 198
Sulfhydryl group(s): Accessibility, ascorbic acid oxidase, *Stark and Dawson,* 712
Fatty acid synthesis mechanism, reaction product, *Bressler and Wakil,* 1441
Localization of one, active site, myosin adenosine triphosphatase, *Sekine, Barnett, and Kielley,* 2769
Rabbit muscle D-glyceraldehyde 3-phosphate dehydrogenase, interaction, oxidized glutathione, cystamine monosulfoxide, tetrathione and, *Pihl and Lange,* 1356
Zinc binding and; carbonic anhydrase, *Rickli and Edsall,* PC258
Sulfonamide(s): Inhibition, folic acid biosynthesis, *Brown,* 536
Sulfonylurea: Hypoglycemia-producing; action, oxidative phosphorylation, study, *Falcone, Mao, and Shrago,* 904
Superprecipitation: Clearing and, adenosine triphosphatase, birefringence, flow studies, actomyosin, interaction, adenosine triphosphate, low ionic strength, *Maruyama and Gergely,* 1100
Myosin B, role of magnesium, *Maruyama and Watanabe,* 3437
Swelling: Mitochondrial; electron transport and, reversal, *Packer,* 1327
Synthase: Malate. *See* Malate synthase
Synthetase: Alanine. *See* Alanine synthetase
Carbamyl phosphate. *See* Carbamyl phosphate synthetase
Formyltetrahydrofolate. *See* Formyltetrahydrofolate synthetase
Glutamine. *See* Glutamine synthetase
Thymidylate. *See* Thymidylate synthetase
Tryptophan. *See* Tryptophan synthetase
System(s): Cell-free, properties, hemoglobin synthesis, *Allen and Schweet,* 760
Deoxyribosyl-synthesizing. *See under* Deoxyribosyl
Disulfide photoreduction; *Rhodospirillum rubrum* chromatophores, *Newton,* 3282
Electron transfer. *See* Electron transfer system
Electron transport. *See* Electron transport system
Enzymatic; *Mycobacterium phlei*, behavior, 6-chromanyl phosphate, vitamin $K_{1(20)}$, *Asano, Brodie, Wagner, Wittreich, and Folkers,* PC2411
Enzyme; monoiodotyrosine synthesis, studies, particulate system, *Witonsky and Kirkwood,* 2892
Fatty acyl coenzyme A and sarcosine dehydrogenase, functional identity, electron-transferring flavoproteins, *Beinert and Frisell,* 2988
Multienzyme, soluble and mitochondrial, interaction, hexose phosphate synthesis, *Mendicino and Utter,* 1716
Particulate; studies, enzyme systems, monoiodotyrosine synthesis, *Witonsky and Kirkwood,* 2892
Respiratory chain. *See* Respiratory chain system

System(s)—*Continued*
Ribonuclease-S; changes, absorption spectra, *Richards and Logue*, 3693
Sarcosine dehydrogenase and fatty acyl coenzyme A, functional identity, electron-transferring flavoproteins, *Beinert and Frisell*, 2988
Thyroxine-degrading, rat liver, reaction conditions, study; thyroxine degradation, *Wynn, Gibbs, and Royster*, 1892
Tyrosine oxidation, liver, quinones, reactivation ability, *p*-hydroxyphenylpyruvic acid oxidase, *Zannoni*, 1172

T

Talomethylose: D-; D-rhamnose and, isolation, polysaccharide, gram-negative bacterium, *Markovitz*, 1767
Talose: 6-Deoxy-D-; 6-deoxy-D-mannose, and, isolation, polysaccharide, gram-negative bacterium, *Markovitz*, 1767
Taurine: Isethionic acid and, synthesis, dog heart, *Read and Welty*, 1521
Teichoic acid(s): *Staphylococcus aureus*, strain Copenhagen, chemical structure, *Sanderson, Strominger, and Nathenson*, 3603
— strains, enzymatic synthesis and immunochemistry of *N*-acetylglucosaminylribitol linkages, *Nathenson and Strominger*, PC3839
Temperature: Extraction; effect, tropomyosin content in actin, *Drabikowski and Gergely*, 3412
Terpenoid substances: β-Sitosterol and, *Ocimum basilicum*, biosynthesis, mevalonic acid-2-C^{14}, *Nicholas*, 1485
Testosterone: New metabolite of, *Fukushima and Bradlow*, PC975
Tetrahydrocoenzyme Q: New, naturally occurring member, coenzyme Q group, *Lavate, Dyer, Springer, and Bentley* PC2715
Tetrahydrofolate: Transfer of tritium from, to methyl group of thymidylate, enzymatic synthesis of thymidylate, *Pastore and Friedkin*, 3802
Tetrahymena pyriformis: Respiratory enzyme study, *Eichel and Rem*, 940
Tetranucleotide(s): Characterization, major compounds, ribonuclease T_1 digests, ribonucleic acid, *Rushizky and Sober*, 2883
Tetranucleotide(s)—*Continued*
Tetrathionate: Oxidized glutathione, cystamine monosulfoxide and, interaction, rabbit muscle D-glyceraldehyde 3-phosphate dehydrogenase —SH groups, *Pihl and Lange*, 1356
Tetronic acid(s): Biosynthesis, molds, formation, carlosic and carolic acids, *Penicillium charlesii, Bentley, Bhate, and Keil*, 859
—, —, —, penicillic acid, *Penicillium cyclopium, Bentley and Keil*, 867
Thiobacillus thioparus: Extracts; phosphorylation, thiosulfate oxidation, *Peck and Fisher*, 190
—; sulfate formation, phosphorylation, O^{18} studies, *Peck and Stulberg*, 1648
Thiogalactoside transacetylase: *Zabin, Kepes, and Monod*, 253
Thiol(s): Effect, water uptake and extrusion, mitochondria, *Neubert and Lehninger*, 952
Thiooxidase: Multiple functions, *Aurbach and Jakoby*, 565
Thiosulfate: Oxidation; and phosphorylation in *Thiobacillus thioparus* extracts, *Peck and Fisher*, 190
Threonine: Distearoyl-L-α-glyceryl-phosphoryl-L-; synthesis, phosphatidylthreonines, *Baer and Eckstein*, 1449
Threonine dehydrase: Activities, rat liver, studies, nature, inducibility, and assay, *Goldstein, Knox, and, Behrman*, 2855
Kinetic parameters, pH dependence, *Davis and Metzler*, 1883
Thrombin: Interaction with fibrinogen; species differences, *Doolittle, Oncley, and Surgenor*, 3123
Thymidine: -Linked sugars, synthesis, thymidine diphosphate-amino sugars, *Kornfeld and Glaser*, 3052
Other ribonucleic acid precursors and, radiocarbon utilization, *Neurospora crassa, Fink and Fink*, 2289
Thymidine diphosphate: -Amino sugars, synthesis of thymidine-linked sugars, *Kornfeld and Glaser*, 3052
Thymidine diphosphate 4-keto-6-deoxy-D-glucose: Intermediate, thymidine diphosphate L-rhamnose synthesis, *Escherichia coli* strains, *Okazaki, Okazaki, Strominger, and Michelson*, 3014
Thymidine diphosphate L-rhamnose: Synthesis, *Escherichia coli* strains, thymidine diphosphate 4-keto-6-deoxy-D-glucose intermediate, *Okazaki, Okazaki, Strominger, and Michelson*, 3014
Thymidylate: Enzymatic synthesis, early steps, purification of thymidylate synthetase, *Escherichia coli, Wahba and Friedkin*, 3794
—, purification, thymidylate synthetase, separation from natural fluorescent inhibitors, *Friedkin, Crawford, Donovan, and Pastore*, 3811
—, transfer, tritium, tetrahydrofolate, methyl group of thymidylate, *Pastore and Friedkin*, 3802
Methyl group, transfer of tritium to from tetrahydrofolate, *Pastore and Friedkin*, 3802
Thymidylate synthetase: *Escherichia coli*, early steps, purification, enzymatic synthesis of thymidylate, *Wahba and Friedkin*, 3794
Purification, separation from natural fluorescent inhibitors, enzymatic synthesis of thymidylate, *Friedkin, Crawford, Donovan, and Pastore*, 3811
—, spectrophotometric assay, *Blakley and McDougall*, 812
Thymidylic acid: Biosynthesis, *Blakley and McDougall*, 812
Thymine: Formyltetrahydrofolate and; biosynthesis, vitamin B_{12}-deficient cells, *Lactobacillus leichmannii, Roberts and Nichol*, 2278
Thymus: Calf; polymerase, oligodeoxyribonucleotide-primed reactions, *Bollum*, 1945
Nuclei; enzyme, polyribonucleotide formation, adenosine triphosphate, polynucleotide nature, *Edmonds and Abrams*, 2636
Thyroglobulin: Iodinated; molecular properties, *Edelhoch and Lippoldt*, 2788
Properties, iodination, *Edelhoch*, 2778
Thyroid: Epinephrine-stimulated glucose oxidation in, *Pastan, Herring, Johnson, and Field*, 287
Long acting stimulator, plasma, fractionation, *McKenzie*, PC3571
Thyroidectomy: Rat, thyroxine, influence, oxidative phosphorylation, mitochondria, *Bronk and Bronk*, 897
Thyroxine: Analogues, antigoitrogenic, calorigenic, and hypocholesteremic activities, aliphatic, alicyclic, and

Thyroxine—*Continued*
aromatic ethers of 3,5-diiodotyrosine, rat, *Jorgensen, Lehman, Greenberg, and Zenker,* 3832
Degradation, rat liver microsomes, products, *Wynn and Gibbs,* 3499
—, study, reaction conditions, rat liver thyroxine-degrading system, *Wynn, Gibbs, and Royster,* 1892
-Degrading system, rat liver, reaction conditions, study, thyroxine degradation, *Wynn, Gibbs, and Royster,* 1892
Deiodination, flavin-induced, photodependent, activation, inert proteins, *Morreale de Escobar, Escobar, del Rey, and Llorente Rodriguez,* PC2041
Effect on isolated dehydrogenases, thyroxine action site, glutamic dehydrogenase, function of adenine and guanine nucleotides, relation of kinetic to sedimentation changes, *Wolff,* 236
—, sedimentation changes, glutamic dehydrogenase, *Wolff,* 230
Influence, oxidative phosphorylation, rat mitochondria, *Bronk and Bronk,* 897
Tissue(s): Adipose. *See* Adipose tissue
Animal; propionic acid metabolism, methylmalonyl coenzyme A racemase, *Mazumder, Sasakawa, Kaziro, and Ochoa,* 3065
Brain, phospholipids, intermediary metabolism, *McCaman,* 672
5α-Cholestan-3β-ol distribution, synthesis, cholesterol, guinea pig, *Werbin, Chaikoff, and Imada,* 2072
Extracts; deoxyribosyl compounds, assay studies, *Schneider,* 1405
Permeability studies, effect, anaerobiosis, glucose uptake, frog sartorius muscle, *Özand, Narahara, and Cori,* 3037
Rat, ovarian, luteinized; corpus luteum, steroid hormone formation, studies *in vitro, Huang and Pearlman,* 1060
Wild Peruvian rodents, high altitude, myoglobin levels, *Reynafarje and Morrison,* 2861
Titer(s): Increased, liver tryptophan pyrrolase, substrate and hormonal enzyme induction, immunochemical evidence, *Feigelson and Greengard,* 3714
Titration: Acid; behavior, human mercaptalbumin, re-examination, changes, amphoteric properties,
Titration—*Continued*
N–F transformation, *Foster and Clark,* 3163
Sperm whale myoglobin, role of heme, *Breslow,* PC3308
Tobacco mosaic virus: Identification, end groups, ribonucleic acid, enzymatic hydrolysis, *Whitfield,* 2865
Torula cremoris: Nicotinamidase, purification and properties, *Joshi and Handler,* 929
T6r$^+$: -Infected *Escherichia coli,* deoxyribosyl-synthesizing system extraction from, spermidine, *Cohen and Barner,* PC1376
Tracer(s): Experiment, isotopic exchange, propionyl carboxylase reaction mechanism, *Kaziro, Hass, Boyer, and Ochoa,* 1460
Transacetylase: Thiogalactoside. *See* Thiogalactoside transacetylase
Transaldolase: Transketolase and, interconversion: D-fructose 6-phosphate ⇌ sedoheptulose 7-phosphate and D-xylose 5-phosphate, *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti,* 3597
Transamidinase: Activities, kidneys, rats, nitrogen-containing diets, *Van Pilsum and Canfield,* 2574
Repression activity during embryonic development, *Walker and Walker,* 473
Transaminase: Glutamic-alanine, *See* Glutamic-alanine transaminase
Glutamic-aspartic. *See* Glutamic-aspartic transaminase
Glutamic oxaloacetate. *See* Glutamic oxaloacetate transaminase
Pyridoxamine-pyruvate. *See* Pyridoxamine - pyruvate transaminase
Tyrosine-α-ketoglutarate. *See* Tyrosine - α - ketoglutarate transaminase
Transfer: Electron. *See* Electron transfer
Transferase(s): Glucosyl. *See* Glucosyl transferases
Glucuronyl. *See* Glucuronyl transferase
Phenylethanolamine-*N*-methyl. *See* Phenylethanolamine - *N* - methyl transferase
Transglucosylase: Uridine diphosphate glucose-glycogen. *See* Uridine diphosphate glucose-glycogen transglucosylase
Transglycosidase: -Catalyzed formation, trehalose 6-phosphate, inhibition, enzyme systems in mycobacteria, *Goldman and Lornitzo,* 3332
Transglycosidase—*Continued*
Transhydrogenase: Function, 17β-hydroxysteroid dehydrogenase, *Jarabak, Adams, Williams-Ashman, and Talalay,* 345
Glutathione - insulin. *See* Glutathione - insulin transhydrogenase
Transhydroxymethylase: Serine. *See* Serine transhydroxymethylase
Transketolase: Transaldolase and, interconversion: D-fructose 6-phosphate ⇌ sedoheptulose 7-phosphate and D-xylose 5-phosphate, *Bonsignore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti,* 3597
Transmethylation: Methionine activation, *Mudd,* PC1372
Transphosphorylase(s): Adenosine triphosphate. *See* Adenosine triphosphate transphosphorylases
Transphosphorylation: Nucleoside di- and triphosphates, apatite crystals, *Krane and Glimcher,* 2991
Transport: Amino acid; dibasic, inhibition, rat kidney, *Rosenberg, Downing, and Segal,* 2265
—; lymph node cells, *Helmreich and Kipnis,* 2582
Electron. *See* Electron transport
Hydrogen; pathways, oxidation, extramitochondrial reduced diphosphopyridine nucleotide, flight muscle, *Sacktor and Dick,* 3259
Transsulfuration: Microbial, *Flavin,* 768
Trehalose 6-phosphate: Transglycosidase-catalyzed formation, inhibition, enzyme systems in mycobacteria, *Goldman and Lornitzo,* 3332
Triazole: 3-Amino-1,2,4-; catalase inhibition kinetics, hydrogen peroxide, catalase-hydrogen peroxide Complex I hydrogen donors, *Margoliash and Schejter,* 2359
Tricarboxylic acid: Cycle, mechanism, fatty acid synthesis regulation, *Martin and Vagelos,* 1787
Triglycerides: Fatty acids and, transport and metabolism in isolated perfused rat liver, carbon tetrachloride action, relationship, etiology of fatty liver, *Heimberg, Weinstein, Dishmon, and Dunkerley,* 3623
Trigonelline: Metabolism, *Joshi and Handler,* 3185
Trinucleotide(s): Ribonucleic acid digests, *Rushizky and Sober,* 834

XUM

Triosephosphate dehydrogenase: Mechanism, inactivation by reduced diphosphopyridine nucleotide, *Amelunxen and Grisolia*, 3240
Muscle; inactivation, reduced diphosphopyridine nucleotide, physiological concentrations, *Tucker and Grisolia*, 1068
Triosephosphate isomerase: Effectiveness *in vivo*, C^{14} distribution in glycogen from deuterated glycerol-C^{14} as measure of, *Rose, Kellermeyer, Stjernholm, and Wood*, 3325
Triparanol: -Treated guinea pigs; intestinal wall, detection, sterol, probable structure of $\Delta^{5,7,24}$-cholestatrien-3β-ol, *Frantz, Sanghvi, and Clayton*, 3381
Triphosphatase: Adenosine. *See* Adenosine triphosphatase
Triphosphate(s): Adenosine. *See* Adenosine triphosphate
Deoxycytidine. *See* Deoxycytidine triphosphate
Deoxythymidine. *See* Deoxythymidine triphosphate
Nucleoside. *See* Nucleoside triphosphate(s)
Triphosphopyridine nucleotide: -Linked dihydroorotic dehydrogenase, properties, *Udaka and Vennesland*, 2018
Reduced; acetoacetyl coenzyme A reduction, *Wakil and Bressler*, 687
—; formation, and glucose 6-phosphate dehydrogenase activity, adrenal tissue, dehydroepiandrosterone effect, *Tsutsui, Marks, and Reich*, 3009
Reduction, action spectra and quantum requirement for, spinach chloroplasts, *Black, Turner, Gibbs, Krogmann, and Gordon*, 580
—, effect, light intensity, spinach chloroplasts, *Turner, Black, and Gibbs*, 577
Triphosphopyridine nucleotide-cytochrome *c* reductase: Isolation, characterization, kinetic studies, *Phillips and Langdon*, 2652
Microsomal; liver, *Williams and Kamin*, 587
Triterpene(s): Pentacyclic; β-sitosterol and, biosynthesis, *salvia officinalis, Nicholas*, 1476
Tritium: C^{14} and, relative retention, nucleosides, nucleic acids, *Neurospora, Fink and Fink*, 2889
Transfer from tetrahydrofolate to
Tritium—*Continued*
methyl group of thymidylate, enzymatic synthesis of thymidylate, *Pastore and Friedkin*, 3802
Tropomyosin: Content in actin; effect, extraction temperature, *Drabikowski and Gergely*, 3412
Trypsin: Chymotrypsin, plasmin and, inhibition, sheep serum inhibitor, *Martin*, 2099
Insulin digestion, *Carpenter and Baum*, 409
Poly-DL-alanyl; properties, *Epstein, Anfinsen, and Sela*, 3458
Polytyrosyl; preparation, characterization, *Glazer, Bar-Eli, and Katchalski*, 1832
Ribonuclease and, carboxymethyl cellulose, reversible reduction, disulfide bonds, *Epstein and Anfinsen*, 2175
Tryptic digest(s): Papain, isolation and sequence, peptides, oxidized protein, *Kimmel, Kato, Paiva, and Smith*, 2525
Tryptophan: Acetyl-L-; inhibition, complex formation, *Cann*, 707
Hydroxylation, phenylalanine hydroxylase, *Renson, Weissbach, and Udenfriend*, 2261
Metabolism, β-(8-xanthurenyl) glucosiduronic acid formation in rat and rat kidney slices, *Johnston and Mason*, 29
Uptake, rat brain, *Guroff and Udenfriend*, 803
Tryptophan pyrrolase: Developmental and adaptive formation, effect, 5-fluorouracil, *Nemeth*, 3703
Formation, puromycin effect, *Nemeth and de la Haba*, 1190
Liver, activity, regulation, *Feigelson and Greengard*, 1908
—, purification, properties, *Greengard and Feigelson*, 1903
Tyrosine-α-ketoglutarate transaminase and, activities, liver, hydrocortisone effect, *Goldstein, Stella, and Knox*, 1723
Tryptophan synthetase: A protein, amino-terminal sequence, *Escherichia coli, Carlton and Yanofsky*, 1531
—, *Escherichia coli, Henning, Helinski, Chao, and Yanofsky*, 1523
Tubes: Counting; CO_2 transfer without liquid nitrogen, determination, carbon, radioactivity, *Van Slyke and Plazin*, 3296
Tumor(s): Ascites; cells, feedback inhi-
Tumor(s)—*Continued*
bition, purine biosynthesis, *Henderson*, 2631
Human adrenal, conversion, 17-hydroxypregnenolone, cortisol, *Weliky and Engel*, 2089
Tyrosine: -Acceptor ribonucleic acids; purification, yeast, *Apgar, Holley, and Merrill*, 796
Activation, transfer to soluble ribonucleic acid, purification, study, hog pancreas enzyme, *Clark and Eyzaguirre*, 3698
Control, 3-deoxy-D-*arabino*-heptulosonic acid 7-phosphate synthesis, *Smith, Ravel, Lax, and Shive*, 3566
Metabolism, guinea pigs, effect of folic acid, *Zannoni, Jacoby, Malawista, and La Du*, 3506
Oxidation system, liver, quinones, reactivation ability, *p*-hydroxyphenylpyruvic acid oxidase, *Zannoni*, 1172
Uptake, brain and muscle, inhibition, stereoselectivity, *Guroff and Udenfriend*, 803
Tyrosine-α-ketoglutarate transaminase: Activity, nonspecific stimulation of *in vivo, Litwack and Diamondstone*, 469
Induction, rat liver, evidence for increase in rate of enzyme synthesis, *Kenney*, 3495
—, —, immunochemical analysis, *Kenney*, 1610
—, —, purification, antitransaminase preparation, *Kenney*, 1605
Tryptophan pyrrolase and, activities, liver, hydrocortisone effect, *Goldstein, Stella, and Knox*, 1723
Tyrosyls: Ovomucoid, solvent perturbation, location, chromophoric residues, proteins, *Herskovits and Laskowski*, 3418
Tyrosyl(s): Serum albumins, solvent perturbation, location, chromophoric residues, *Herskovits and Laskowski*, 2481

U

Ultracentrifugal analysis: Partially polymerized actin solutions, studies on actin, *Martonosi*, 2795
Urea: 7 M; paper electrophoresis, separation and characterization of acid-induced insulin transformation products, *Sundby*, 3406
Denaturation, pancreatic ribonuclease, stabilization, anion binding,

Urea—*Continued*
Nelson, Hummel, Swenson, and Friedman, 1575
—rates, differentiation, two forms, chymotrypsin, *Chervenka,* 2105
Pancreatic ribonuclease denaturation, *Nelson and Hummel,* 1567
Protein denaturation, solutions, amino acid solubility, *Whitney and Tanford,* PC1735
Solutions, amino acid solubility, protein denaturation, *Whitney and Tanford,* PC1735
Urea cycle: Enzymes, adaptive characteristics, rat, *Schimke,* 459
—, effects, fasting, protein-free diets, levels, rat liver, *Schimke,* 1921
Ureide: Carbon, adenine, utilization, riboflavin biosynthesis, *Eremothecium ashbyii, Smith, Connelly, and Smead,* 3207
Uridine: Derivative; rearrangement, pseudouridine formation, *Robbins and Hammond,* PC1379
Diphosphoacetylmuramyl hexapeptide; penicillin-treated *Streptococcus faecalis, Mandelstam, Loercher, and Strominger,* 2683
Uridine diphosphate-D-glucose dehydrogenase: Rabbit skin, biosynthesis of uronic acids by skin enzymes, *Jacobson and Davidson,* 635
Uridine diphosphate D-glucose-glycogen glucosyltranferase: From yeast, *Algranati and Cabib,* 1007
Uridine diphosphate glucose-glycogen transglucosylase: Preparation and properties, *Kornfeld and Brown,* 1772
Uridine diphosphate-D-glucuronic acid-5-epimerase: Biosynthesis, uronic acids, skin enzymes, *Jacobson and Davidson,* 638
Uridine nucleotide(s): *N*-Acetylglucosamine, galactose, *Suzuki,* 1393
Bacterial; enzymatic synthesis, peptide, addition of L-alanine, D-glutamic acid, L-lysine, *Ito and Strominger,* 2689
—; —, —, enzymatic addition, D-alanyl-D-alanine, *Ito and Strominger,* 2696
Guanosine nucleotides and, hen oviduct, *Strominger,* 1388
-Peptide; enzymatic D-alanyl-D-alanine addition, *Comb,* 1601
Urine: β-Glucuronidase, purification and properties, *Pettengill and Fishman,* 24
Urine—*Continued*
Human; adenosine 3′,5′-phosphate in, biological materials, cyclic 3′,5′-nucleotide phosphodiesterase, purication, properties, use, *Butcher and Sutherland,* 1244
—; identification, C_{18} oxygenated corticosteroids, *Ulick and Vetter,* 3364
—; phenolic amines, *Kakimoto and Armstrong,* 208
Uronic acid(s): Biosynthesis, skin enzymes, uridine diphosphate-D-glucose dehydrogenase, rabbit skin, *Jacobson and Davidson,* 635
—, —, uridine diphosphate-D-glucuronic acid-5-epimerase, *Jacobson and Davidson,* 638
4-Deoxy-L-*erythro*-5-hexoseulose; enzymatic reduction to 2-keto-3-deoxy-D-gluconic acid, alginic acid metabolism in bacteria, *Preiss and Ashwell,* 317
—; unsaturated oligosaccharides and, enzymatic formation, alginic acid metabolism in bacteria, *Preiss and Ashwell,* 309

V

Valine: -Acceptor ribonucleic acids; purification, yeast, *Apgar, Holley, and Merrill,* 796
Velocity: Equations; integrated, kinetics, yeast D-lactic cytochrome *c* reductase, *Graae and Nygaard,* 3255
Venom(s): Snake; digest, heart muscle preparation, reduced diphosphopyridine nucleotide dehydrogenase, preparation, properties, *King and Howard,* 1686
Virus: -Induced acquisition, metabolic function, deoxycytidylate hydroxymethylase purification, properties, origin, studies, *Pizer and Cohen,* 1251
Tobacco mosaic. *See* Tobacco mosaic virus
Vitamin A_1: Conversion to retinene$_2$, fresh-water fish, *Naito and Wilt,* 3060
Vitamin A acid: From vitamin A aldehyde oxidation, *Futterman,* 677
Vitamin A aldehyde: Oxidation, to vitamin A acid, *Futterman,* 677
Vitamin B_6: -Deficient and complete rations, mice, vitamin B_6 distribution, *Lyon, Bain, and Williams,* 1989
Distribution, mice, complete and
Vitamin B_6—*Continued*
vitamin B_6-deficient rations, *Lyon, Bain, and Williams,* 1989
Vitamin B_{12}: Coenzyme; biosynthesis, cyanide release, spectral change requirements, *Weissbach, Redfield, and Peterkofsky,* 3217
-Deficient cells, *Lactobacillus leichmannii,* biosynthesis, thymine and formyltetrahydrofolate, *Roberts and Nichol,* 2278
Derivatives and CO_2-pyruvate exchange reaction, *Peel,* PC263
Vitamin D: Action, calcium release, kidney mitochondria, *Engstrom and DeLuca,* PC974
Vitamin E: -Deficient rabbits: increased lysozymal enzymes, muscular dystrophy, *Zalkin, Tappel, Caldwell, Shibko, Desai, and Holliday,* 2678
Vitamin $K_{1(20)}$: 6-Chromanyl phosphate, behavior, enzymatic system, *Mycobacterium phlei, Asano, Brodie, Wagner, Wittreich, and Folkers,* PC2411

W

Water: Extrusion, mitochondria, heat-labile factor required, *Lehninger,* 946
Uptake and extrusion, effect, thiols and disulfides, *Neubert and Lehninger,* 952
Women: Estrogen metabolism, pregnant and normal, *Fishman, Brown, Hellman, Zumoff, and Gallagher,* 1489

X

Xanthine oxidase: Action, 2-substituted adenines, *Scott and Brown,* 3215
Cytochrome *c* reduction, competitive inhibition by myoglobin, *Fridovich,* 584
Electron acceptors, inhibition of reduction, *Fridovich and Handler,* 916
Xanthurenic acid: Quinaldic and kynurenic acids and, metabolism, rabbit, *Kaihara and Price,* 1727
Xanthurenyl glucosiduronic acid: *See* Glucosiduronic acid
Xylose: L-; Degradation pathway, *Aerobacter aerogenes, Anderson and Wood,* 296
Xylose 5-phosphate: D-sedoheptulose 7-phosphate and, interconversion with D-fructose 6-phosphate, transketolase and transaldolase, *Bon-*

XUM

Xylose 5-phosphate—*Continued*
signore, Pontremoli, Mangiarotti, De Flora, and Mangiarotti, 3597
Xylulokinase: L-; purification, properties, *Anderson and Wood,* 1029

Y

Yeast(s): Alanine-, valine-, histidine-, and tyrosine-acceptor ribonucleic acids from, *Apgar, Holley, and Merrill,* 796
Aldolase, preparation, properties, *Vanderheiden, Meinhart, Dodson, and Krebs,* 2095
Bakers'; formaldehyde dehydrogenase, *Rose and Racker,* 3279
Yeast(s)—*Continued*
—; 5,10-methylenetetrahydrofolic dehydrogenase, purification, properties, *Ramasastri and Blakley,* 1982
Electron transport particle, purification, properties, *Mackler, Collipp, Duncan, Rao, and Huennekens,* 2968
Extracts; deacylation, diastereoisomers, β-hydroxy-β-methylglutaryl coenzyme A, *Kirtley, Rudney, and Durr,* 1781
Hexokinase, kinetic studies, *Fromm and Zewe,* 3027
Yeast(s)—*Continued*
Hydroxystearic acids, metabolism, *Light, Lennarz, and Bloch,* 1793
D-Lactic cytochrome *c* reductase; kinetics, integrated velocity equations, *Graae and Nygaard,* 3255
Lysine-requiring mutant, glutaric acid accumulation, *Mattoon and Haight,* 3486
Uridine diphosphate D-glucose-glycogen glucosyltransferase, *Algranati and Cabib,* 1007

Z

Zinc: Binding and sulfhydryl group, carbonic anhydrase, *Rickli and Edsall,* PC258